The Builder.

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Stones, Metals, and Maps in the French Division of "The Exhibition."

HE products of mines, quarries, and metallurgic factories, forming Class 1 of the French Division of the Exhibition, cannot be considered in the least *representative* of the mineral wealth of France, and of the branches of industry that are connected with those products. The display of such riches of the country is inferior not only to that of the British minerals and metallurgy; it is greatly inferior to that of several of the other foreign divisions. Having, however, said this much, by way of emphasizing our caution against generalizing from classes and sections of the Exhibition that are incomplete, we are able to find several specimens of materials and manufactures in Class 1 of the French Division, which may call for notice.

Following the original idea of arrangement, rather than that which exists in the building, the products and objects we have referred to, may be comprised in seven sub-classes; as, 1, Products of quarries, called by the generic name *rocks*, serving for the construction or decoration of edifices, and employed in the industrial arts; 2, Mineral combustibles, and matters derived from them, as coal, lignite, turf and bitumen, coke and agglomerates; 3, Metal-producing minerals, as those of iron, lead, copper, &c.; 4, Machines, tools, and apparatus of mining *exploitation* and extraction; 5, Metallic products furnished by the treatment of minerals in manufactories, as pig-iron, bar-iron, iron wire; steel, puddled, cast, &c.; lead, silver, aluminium, &c.; 6, Mineralogical collections, comprising particular types, or different mineral substances of a locality united together; and 7, Geological maps and topographical plans of veins of minerals or of coal formations. It is in the two mineral substances which play the most important part in modern industry, namely, coal and iron, that the French Division makes the least approach to completeness. That this part, in France, is important, may be gathered from inspection of models in Class 10, some of which we have spoken of, and from other manufactured articles as well as maps in that class, to which we shall refer shortly: but as there are only ninety-six exhibitors from all France, in Class 1, nearly thirty of them being from the capital and the departments close to it, and seven from Corsica, the information to be acquired of the resources of the country is very inadequate.

The French juries for the admission of specimens to the Exhibition, indicated as amongst improvements in the course of the past ten years, in the extraction and fabrication of the products belonging to Class 1,—First. The development given to the production of coal, and the persevering efforts made in different localities to discover and realize the value of new beds of combustible material; 2. The various perfectionments in the sinking of pits through the most difficult water-bearing strata, in the machinery of extraction and ventilation, and in the *exploitation* of thick beds of coal; and the processes for the agglomeration of small coal; 3. The development of the *exploitation* of pyrites of iron and copper for the fabrication of sulphuric acid; 4. Increase in the extraction of *kaolin*, and also in the manufacture of cements and hydraulic limes; 5. A notable augmentation in the quantity of wrought and cast iron produced; the use of hot-air become almost general in the high furnaces; utilization more and more frequent, of the gas and heat otherwise lost, in reverbatory and other forms of furnace; and the improvements, numerous and varied, in the rollers for the fabrication of special forms and dimensions of wrought iron; 6. The more active search for manganesic and spathose minerals for the fabrication of cast iron, using wood; and the tendency of this special fabrication to develop itself; 7. Increase in the fabrication of puddled, cast, and other steel, from cast iron, by new processes, with the aid of wood of the locality,—methods of which the use extends more and more every day; 8. A certain amount of progress in the treatment of the minerals of lead and copper, and in the elaboration of those metals; and 9. The creation in France of the production of aluminium, and the remarkable progress in the manufacture of a multitude of objects of this metal and its alloys; and the perfection of the treatment of the mineral of platinum and in the fabrication of objects in which the metal is used.

It will be useful to add notes of the principal improvements which we find amongst those mentioned as having accrued during the same time in products of the kind comprised in Class 2, "Chemical and Pharmaceutical Products and Perfumery;" which includes colours. Such improvements are the use, already alluded to, of pyrites in place of sulphur, which has caused reduction in the price of sulphuric acid; extension of the indigenous production of potash by the calcination of the residues of the distillation of beet-root juice; and the preparation of the *potasse du suint*; the developments in the process of extraction from the waters of salt-marshes, of the sulphate of soda and the salts of manganese which are contained in them; the improvements in the production of ammonia, and its salts, from the condensed fluid collected during distillation of coal; the development of the industries of the distillation of coal-tar, and the preparation of benzine and certain acids; the application, more and more frequent, of the silicates of soda and potash, to the conservation of monuments and sculpture; the new industry of the salts of alumina with a soda-base, and of pure alumina; the experiments for the industrial production of the prussiates and ammoniacal salts by ammonia and carbonate of barytes; increase of the production of pyroligneous acid and its compounds; development given to the fabrication of the vegetable alkaloids; extension in the manufacture of white lead, and artificial ultramarine; introduction of the yellow, red, violet, and blue colouring matters, resulting from the transformations of aniline; and the use of sulphuret of carbon for the extraction of fatty substances and perfumes.

The products and objects exhibited in Class 10—"*Constructions Civiles*"—comprise five sub-classes; 1, Materials of construction, as mastics or stuccoes, cements, bricks, tiles, and artificial stones; and, 2 to 5, models, drawings, and maps, to which we shall return in some future article in continuation of what we have given on the Public Works of France. Amongst the gains of the last ten years, in this class, the juries mention the more general use of calcareous cements, and progress realized in their fabrication and application.

It will be convenient to us to deviate in some measure from the classification, above mentioned, and follow the order of our notes on Class 1 of the British Division. We alluded in these, to the French geological maps. We find several maps of departments of France, in Classes 1 and 10 of the French Division. They include the admirable map by Mr. A. Delesse, showing the hydrology of the department of the Seine, just now particularly interesting; one by Mr. E. Dormoy, of the coal district of Valenciennes and the neighbourhood of Mons, designed to assist explorers in choosing the spots for borings and pits; one of the coal district of the Pas-de-Calais, by Mr. E. Sens; and one of the department of the Puy-de-Dôme, by Mr. H. Lecoq. These are catalogued as in the Annex; but the chief of them will be found in Class 10, in the court next the nave, or with the products, Class 1. The illustration of the Pas-de-Calais includes a valuable "Statistique" or atlas, showing in numerous sheets, the position of veins of coal. In the nave-court will be found an atlas of twelve sheets, forming a map of the ancient principality of Dombes in the department of the Ain, a curious district of about 100,000 hectares, of which area, more than one-sixth has been converted into fish-ponds, which are in number about 1,600, and are emptied every two years to obtain the fish, and to be planted for cereals, and afterwards again filled with water and stocked with young fish. The insufficiency of the population and other causes, led to the method of cultivation. The method has, however, as might have been expected, been most injurious to health in the district. The present map, made by the engineers "des ponts et chaussées," is the first step to a remedy by the Government, of the disastrous condition of things, here alluded to. It is very minute in its representation of details. Mr. Dormoy's map, in the same court, is contained in an atlas of thirty-four sheets, which put together would measure 8 mètres by four mètres, representing 80 kilomètres by 20 kilomètres, including part of Belgium and stretching to the Pas-de-Calais. In the construction of the map, the upper strata are supposed removed. All the pits and borings and their results are indicated, as well as the height of the top-soil above the sea-level, and the depth of the coal, the inclination of the veins, and much besides in the way of information. Here also is an atlas, and volume of text, by Mr. Gruner, "ingénieur en chef des mines," executed at the Imprimerie Impériale in 1857, devoted to the department of the Loire, to which is to be added a special volume for the coal basin. A summary of this latter division of the work, however, appeared in advance, in 1847. Besides the geology, and concerning the physical character of the whole district between the Rhône and the Allier, the present work contains much other information, as on the relation between the configuration of the soil and the geology, the *régime* of the river Loire during the years 1846 to 1855, the situation of mines, works, lime-kilns, and tileries. A geological map of the department of the Haute-Marne, commenced by Mr. Duhamel, and finished by Mr. Elie de Beaumont and Mr. de Chancourtois, should also be looked at. It may, we believe, be made to form part of a geological map of France, by Mr. de Beaumont and Mr. Dufrénoy, of which a portion, of the north of France, appeared in the Exhibition of 1855. The present map supplies much information, which should also be said of the map of the department of the Meurthe, which is due to Mr. Levallois. Besides the hydrological map of Paris, there is one by the same engineer, Mr. Delesse, representing by a new method the geology. It shows both the subsoil to the greatest depth reached, and the levels. In the hydrological map, the subterranean sources of water-supply are shown; the levels of water in ordinary and artesian wells are figured; the degrees of hardness as found by the hydrotimeter of Messrs. Boutron & Boudet are given; and the nature of the soil bathed by these waters is indicated by tints. Of the atlas comprising the plan of Paris underground, the quarries and catacombs, and of seve-

ral plans of the same capital we will not now speak. We must mention, however, the "Carte Agronomique de l'Arrondissement de Toul (Meurthe)." A *carte agronomique* is intended to represent surface-soil, or the differences of condition which have to be noted in agriculture. In 1852, the greater number of the departmental geological maps being terminated, suggestion was made through the prefects, to the "Conseils Généraux," that advantage would accrue to agriculture from the execution of *cartes agronomiques*, as it had in respect of industrial researches from the geological maps. The general council of La Meurthe determined on having such a map, *carte agronomique*, of the department; and produced the first instalment of their design and the first work of the kind in France, in 1858, and the descriptive text in 1860. The map and text were prepared by Mr. E. Jacquet, engineer in chief "des mines." This author regards the super-soil of the earth as independent formations, rather than the materials of decomposition of the subsoil or rocks, as taught in treatises on agriculture: so that the reason for agronomical maps lies in this capital distinction of what has to be shown in them, from what would be geological. A *carte agronomique* ought to show the soil proper, the subsoil, and the nature of the cultivation. As to the subsoil, all that is attempted in the map we are noticing, is the marking, by hatchings of different colours, whether substrata are permeable or impermeable. The quarries are indicated. In the text, the climate, the analysis of the different soils, the system of culture, the population, building materials, water-supply, and means of communication are treated of; and agricultural statistics are given. What is being done for the other arrondissements of La Meurthe and in the rest of France, we are not informed; but the example is worth holding up to our country; and those who are anxious to see a good system of "Agricultural Statistics" should much approve of it.

We must also mention an atlas which affords an instalment of a great work, that of ascertaining the levels of principal spots over the whole of France continental. This work, "Nivellement général de la France," was suggested in 1857, by Mr. Bourdaloue, who had already completed a similar work for the department of the Cher. The object was to render more easy and certain, the operations having relation to new routes, water-courses, drainage, and irrigation. Great detail and exactness therefore were required, which would involve much expense. The first part of the undertaking, comprising the fixing the principal points, was commenced at the end of September 1857, and will be finished before the end of the present year. A map shows the condition of this branch of the undertaking on the 31st of March, 1862. Great care has been taken to secure accuracy; and with such success that it can be said the levels for all France are exact to within three centimètres. The datum will be the mean level of the sea at Marseilles.

Those who would understand something relating to the climate and products of France, should examine the maps of the three regions, the wheat, wine of exportation, and silk producing, and the specimens of the principal types of animals and birds, useful or considered hurtful, belonging to those regions, and the botanical and geological collections, which are exhibited by Messrs. Éloffe, of Paris. They deserve the attention of our Educational Committee of Council. Very interesting also is the collection of specimens of useful minerals which are *exploités* in the new department of the Savoy, and which are exhibited by the Chamber of Commerce of Chambery. They include marbles, lime and cement stones; stones for building, and objects of ornament; minerals of iron, lead, and copper, some of them argentiferous, and their products; minerals of antimony, zinc and arsenic; specimens of the *rocks* traversed by the Mont Cenis tunnel; clays and clay manufactures; anthracite and other combustibles; and slates. A catalogue, which may be obtained, contains much useful information.

In our notice of the materials and products in the Eastern Annex, we gave prominent place to the specimens of the metals aluminium and platinum and their applications. For the means of utilizing each of these metals, the world is indebted to one French chemist, Mr. St. Claire Deville; and each is represented in the French Division of the Exhibition, applied in various forms. The aluminium and its alloy with copper, are shown chiefly by Messrs. P. Morin & Co., of Nanterre, near Paris, whose specimens will be found in one of the passages of entrance to the French Court from the nave. The *decorative* and *ornamental* adaptability of the metal and alloy have been more satisfactorily illustrated in Paris, than here, in London; but Messrs. Morin exhibit a sufficient number of articles of utility, and specimens in different stages of manufacture, to allow to be appreciated the value of the incorrodible, light, malleable, ductile and easily-cast, strong and cheap, material which may be substituted, and with the advantages which are obvious, for silver and gold. We believe the price of aluminium, by weight, is less than half that of silver; but the specific gravity is so much less than that of silver, that three or four times the quantity or volume can be obtained for such less price: the economy therefore is very great. The alloy called aluminium-bronze, resembling gold, we are told, has not more than one-eighth the cost of aluminium itself. Many of the cases in the centre of the French Court, show the application of the metal in ornaments for the person. The principal exhibitors of platinum are Messrs. P. & A. Chapuis, and Messrs. Desmoutis, Chapuis & Quennessen. Both of these firms exhibit crucibles and other vessels for experimental and manufacturing chemistry, in great variety of dimension; and one of them, if not the other, has specimens of the metals palladium, iridium, rhodium, osmium, and ruthenium,—the same case containing an alembic, or retort, which is very much larger than that valued at 465*l.* exhibited in the British Division of the building. If Mr. St. Claire Deville's name be not in the list of awards, there is something wrong in the principle of them.

Clays exhibited may be found in Class 35, "Produits Céramiques," with certain manufactures allied to Class 1, as refractory bricks and crucibles. Drainpipes are shown by Messrs. Duméril & Lewis, of St. Omer (Pas-de-Calais), and by Mr. Fiolet of the same place. Objects of this character will be found, with some of the others interesting to architects and builders, in the recesses marked Db and Eb on the northern side, within the great French Court; but the absence of all order in numbering, which prevails as much in the foreign divisions of the Exhibition as the British, sadly interferes with useful recollection of those and other objects. Clay-ware pipes by Messrs. Zeller, of Ollwiller (Haut-Rhin), enamelled, and bituminized paper pipes by Messrs. Jaloureau, of Paris, of good manufacture, for conveyance of water and gas, will be found, besides excellent copper pipes and welded-iron pipes. The bitumenized pipes are favourably reported upon in Paris, as regards durability, after four years' trial; and elasticity is one advantage of them. Tinned lead pipes are exhibited by Mr. Ch. Sebille of Nantes. The importance of procuring a supply of an article, if efficient, of this latter character, cannot be too much insisted upon. It appears that an English patent for a somewhat similar description of piping (Bennett's) was sealed in 1861. The French manufacture has been carried on five or six years; and the town of Nantes is served with the pipes. The English method is described as one of pressing and tinning the interior surface of lead pipe in one operation; and Dr. Letheby, reporting the results of experiments, continued during nine days, with common water, rain-water, and distilled water, tried in straight and bent forms of tube, says that there was complete protection from corrosive action; the most delicate tests failing to discover the presence of lead in the water; whilst common lead-piping with the same water (rain and distilled), quickly communicated to the water a metallic impregnation. We believe piping manufactured according to Bennett's patent may be found in the Eastern Annex, in Class 1 of the British Division. Mr. Sebille's piping, however, is tinned both sides. Equally interesting to us is another description of piping exhibited by Mr. Sebille. Neither kind is named in the catalogue. The pipes last referred to, are manufactured from pulverized slate-refuse, or cinders, and about one-fifth part coal-pitch. The compound, called slate-paste, having been heated and well mixed in an iron pan, can be moulded into the shape of pipes, bricks or slabs. The material constitutes the least portion of the expense: comparatively unskilled labour, however, is adequate to the work. The material is so hard, whilst free from cracks, that it has been suggested as well adapted for paving stables, and we are assured it has been found that such hardness is preserved in water heated to 180°, and that no cold has any effect upon it. A 3-inch pipe, of usual substance, will stand an internal pressure of ten atmospheres. When a bend is required, it suffices to hold a straight pipe to the fire, till heated to about 200°, when the curve can be made without effort. Joints are formed, by the aid of a tool resembling ordinary pincers; which is made red hot, and clasping the pipe, is rubbed over it to form the seam; the material itself, which can be at all times re-melted, being used as solder. There is some contrivance for "imparting sufficient flexibility to jointed pipes for underground works." When the pipes are intended for gas, the inventor fills them with common sheet-iron tubing, galvanized; but what is the argument for this arrangement in contradistinction to mere iron-piping, we are not informed. Bricks, of the material, can be laid, using the same material to bed them; so that water-tight reservoirs could be thus formed. The manufacture is already carried on in France, at Nantes, and on several railways; and the ever-active Mr. Jennings has got hold of the scheme of a similar manufacture in England. Should the exertions succeed, our demand for the removal by utilization, of the cumbrous and unsightly refuse of many quarries and works, may be to a considerable extent answered. Would it not be possible, before the close of the Exhibition, to ferret out all the specimens of pipes of different materials, for the conveyance of water, and subject them all, or duplicates, to similar experiments, chemical and mechanical; the latter including not only experiments to ascertain the resistance to bursting, but others on the resistance to collapse, as from a weight of superincumbent earth. The results being tabulated, with prices, a record would be left, the value of which after the Exhibition, in every question of supply of water to town or house, would be immense. Record of this kind should surely be made to result from some appointment of juries or reporters; and we know that what we looked for, from at least one foreign government directing the exertions of a large staff, will be produced, that is, if bad arrangement of the objects exhibited and the excessively-crowded state of the building admit of it.

BRITISH ARCHITECTS.

NEW MATERIALS FOR THEIR LIVES.

I PROPOSE to supply at such intervals as your space, Mr. Editor, and duty to your readers, will allow me, memoranda of moment, hitherto unknown, or not easily accessible, relating to the lives and works of some of the greatest men of our English school of architecture. In what I send you, I will now and then correct received accounts and accepted statements, supplying materials that will prove welcome, I make little doubt, to architect and builder, contractor and paymaster, master mason and master carpenter; to clerks of works, district surveyors, working men, skilled apprentices, and the general reader. For what I send you, I shall give chapter and verse, saying what I have to say in as few words as I can well use.

In Hertfordshire, that "peculiar" of lord high chancellors, and within a ring-fence of the mitred Abbey of St. Alban, two of Sir Christopher Wren's assistants are buried—his most celebrated pupil, and his master mason at St. Paul's, from the first stone to the very last. Members of the Institute of British Architects, and holders of Soane and Institute medals, need hardly be told that I refer to Nicholas Hawksmoor, architect, of Shenley, in Herts, esq., and to Edward Strong, mason, of New Barnes, in St. Alban's, Herts.

During a year's residence in St. Alban's, the disfranchised borough of the corrupt Lord Bacon, I have made more than one pleasant pilgrimage to the graves of Hawksmoor and Strong,—a pilgrimage, as my readers will see, not unmixed with pain; for the inhabitants of Hertfordshire would seem to care little or nothing about Wren's assistants or Wren himself.

This Nicholas Hawksmoor with whom we have first to do was born—so received authorities aver—in the year 1667, and died March 25, 1736, "aged near seventy." This is incorrect. The able architect of St. Mary Woolnoth, in London; of the church on the Thames banks, at Limehouse; and of the towers at All Souls', at Oxford, died, so his gravestone informs us, at the age of seventy-five, and in the year, I think, 1736: I say I think; for on a recent pilgrimage to his grave, in the churchyard of Shenley, in Hertfordshire, I found the figure "6" and the month of the year illegible; with little more to be gathered from the stone that protects the body of the "poor inhabitant below" than the forlorn *hic jacet* of Wordsworth, and the words:—

NICHOLAUS HAWKSMOOR, Armr.
ARCHITECTUS
Obijt vicesimo quinto die
Anno Domini 173..
Ætatis 75.

Worse still, I found the 5-inch-thick blue leger

which covers his remains broken in two,—wantonly broken, I suspect, during the recent reparations of the church. Wren's celebrated pupil, and Benson's predecessor, lies buried close to the chancel window of Shenley Church, under a splendid yew of the Plantagenet and Robin Hood period. The grave of a man so eminent in his art calls for protection and restoration. May I ask your aid, Mr. Editor, and the aid of your readers, in accomplishing so reverential a piece of work?

The grave of Edward Strong, master-mason to Sir Christopher Wren, and to St. Paul's Cathedral, is within the church of St. Peter, in St. Alban's. The place of Strong's interment is marked, we are led to suppose, by a blue leger-stone, partly visible, and only in part legible, and by a mural monument of white marble, excellently wrought, but concealed by the organ-gallery, under which it was most improperly buried when the chancel was shortened by a thoughtless vicar and two penurious churchwardens. Wren's master-mason lived at New Barnes, on the banks of the Ver, and died 8th February, 1723, in the seventy-second year of his age. His widow died two years later, on the 15th June, 1725, and at the same age,—seventy-two. New Barnes, a very pretty place, is now the property of a widow lady of wealth, who has done, without ostentation, and without asking, more than one pious act in and about St. Alban's. Is she aware, I often ask myself, of the ill fate her predecessor's gravestone and monument have come to? It is vexatious to see thus set aside and stowed away, as of no value and of no manner of interest, a work of art, for such it is, erected to the memory of a man whose name will remain inseparably associated with Wren's great masterpiece of Protestant church architecture. Your calling attention to this buried monument will, I have no doubt, prompt an excellent widow to the pious act of rebringing into light Wren's master-mason's grave and monument. There is a blank wall on the north side of the chopped-down chancel, which would receive the monument admirably, and improve at the same time the appearance of the church. A word with the worthy vicar would possibly effect so good a work. I will see our vicar, and let your readers know, *Mr. Builder*, to what end.

Quitting St. Alban's, I will now turn to other sources for materials of moment. Here is Ripley's estimate for building the present Admiralty at Whitehall, *minus* Adam's handsome screen of concealment:—

"*To the Lords of the Admiralty, 4th March*, 1722.

Pursuant to your lordships' directions, I have drawn a plan and considered the charge to rebuild the Admiralty, and find that, if it be built in a plain and substantial manner, that is, the out as well as the in walls with the best brick and mortar, with stone in proper places, to preserve and make the said building durable, and to arch and groyne all the ground story, and to cover the building wholly with lead, the charge will be about the sum of 22,400*l.* (Signed) THOMAS RIPLEY."

Make a survey of the Admiralty, Mr. Editor, and let your readers know what you think of Ripley and his estimate. From what I can learn, Ripley actually built *within* his estimate,—a rare virtue now-a-days.

Yet another bit about "Ripley and his rule" made immortal by Pope. Thomas Ripley, of Wormwood-street, in London, was admitted to the freedom of the Carpenters' Company by virtue of an order of the Court of Aldermen dated 14th March, 1705. He died, as is well known, in 1778. That Ripley put good materials into his houses, Houghton, built by him for Sir Robert Walpole, is still a lasting testimony. No better or more massive drawing-room and withdrawing-room doors are to be seen in England.

Kent-and-Nature Kent died in 1748, leaving property to the amount of about ten thousand pounds, which he divided, we are told, "between his relations and an actress with whom he had long lived." What actress? I often asked myself, and learnt, at the cost of one shilling; for a single shilling, I saw in Doctors' Commons the last will and testament of William Kent. The actress, whose name has escaped the biographers of Kent, was Elizabeth Butler, of the parish of St. Paul, Covent Garden. That Kent divided his money between his relations and the actress is not borne out by his will. To Mrs. Butler he bequeathed six hundred pounds; and to her son and daughter, three hundred pounds each. One legacy came too late, "a bust of Raphael to Alexander Pope, esq.," of Twickenham." A last request in the will of the same architect is tainted with his well-known vanity: "I desire to be buried in the vault belonging to the Earl of Burlington, in the parish church of Chiswick, and request of my executors that leave be asked of his lordship for that purpose." That leave was granted, the burial register of Chiswick, in Middlesex thus informs us: "William Kent, esq., from London, buried in a vault in the chancel, April 17, 1748."

In my next communication I shall have something to relate, new and of moment, touching Wren and his works:—"Great Christopher takes all the room." PETER CUNNINGHAM.

THOMAS-À-BECKET'S CANDLESTICK.

PERHAPS there are few countries in Europe that were "once upon a time" richer in works of art than Old England. No country possessed, at one time, finer plate, jewels, tapestries, embroideries, carved work, &c., than England. Where are they now? The Reformation must be the echo that answers "Where?" To it, and to the Revolution that succeeded, making a period of about one hundred and twenty-nine years, must, it is feared, be attributed the destruction, sale, and breaking up of those glorious specimens of gold and silver work, so rich in chasing, or with inlaying of jewels, the production of the cunningest artisans of that or any other time. We have only to peruse the inventories of the valuables given in and surrendered at the dissolution of the religious houses at the Reformation; and the still more wanton destruction of what remained during the Civil Wars, to become acquainted with the vast quantity of costly and magnificent articles now lost to us for ever. It is true the great and increasing wealth of our country has caused the disappearance of our old picturesque, but perhaps somewhat inconvenient, houses, with their rich and quaintly-carved exteriors and interiors. The same may be said to have been the case with the stately and rich furniture of our ancestors.

It is, then, or ought to be, a subject of congratulation to us when we can welcome back to our our country any such object peculiarly English, and a jubilate should be sung out as a welcome to the beautiful and most interesting specimen now safely housed in the Kensington Museum, and for the possession of which we are mainly indebted to Mr. Webb, of Grafton-street.

The candlestick in question is what is usually termed a pascal one, and is the workmanship of the twelfth century. This celebrated luminary was made in England, by order of Thomas-à-Becket, and intended by him as a present to the once splendid Abbey of Gloucester, still so renowned amongst cathedrals, for its matchless cloisters, lofty and magnificent choir, grand Norman nave, and cunningly-devised whispering-gallery — the only one in this country, that of St. Paul's excepted. In consequence of the quarrel between Henry II. and Becket, the archbishop left England and retired to Mans, and remained there from 1164 to 1170, taking with him many valuables, and among them this celebrated candlestick, which he eventually presented to the church at Mans, where it remained up to the period of the Revolution, about the year 1792. To save it from the universal destruction then going on, or from the rapacity of the *sans coulottes*, it was concealed in a granary, where, a few years since, it was discovered, and purchased by the Marquis d'Espaulant, in whose possession it remained till again sold to the Prince Soltikoff, at whose late sale it was secured for England by Mr. Webb, for the sum of 680*l.*, he having previously offered the prince 1,000*l.* for it. This candlestick is of fine old laten richly gilt, and most elaborately chased. It was cast in a mould of *cire perdue*, which implies that the model is destroyed in releasing the casting from it. It is composed of a pillar, divided into two compartments by ornamental bosses, supporting a grand patera or cup, resting on three chimeræ. The pillar descends into a triangular base, which is profusely enriched with figures, foliage, and monsters, in the most varied and whimsical attitudes, resting on a ground of pierced work. On a ribbon twisted round the pillar of the candlestick are the following inscriptions:—

"Lucis onus virtutis, opus doctrina refulgens prædicat, ut vicio non tenebretur homo.
Abbatis Petri gregis et devotione mitis, me dedit Ecclesiæ Sancti Petri Glocestre.
Hoc Cenomanensis res ecclesiæ Pociensis Thomas dicavit, cum sol annum renovavit."

In Mr. Webb's interesting collection is a dyptic, or portable altar, usually suspended by a chain to the girdle. This was always available for devotional purposes. The present beautiful specimen belonged to Thomas Baylis, the last grand pryor of Wenlock Abbey. It is of translucid enamel, with raised silver-gilt Gothic canopies, under which are figures of saints in silver, beautifully chased. It is inscribed, "Ora pro Thomas Baylé."

OF TRIVIALITY IN MODERN WORK.

IT would be much easier to explain what I have to say by reference to existing works, than by mere explanation of principles; but as modern men are full of vanity and conceit, and little able to understand pure, disinterested love of art, it is, perhaps, as well not to mention names. If their hearts are not entirely absorbed by selfish conceit, nature may yet have influence on their thought.

In a modern Gothic building—and I speak of the most popular work, not the work of ten years ago, but of the years 1861 and 1862—there is a continued straining after effect and "sensation;" a continued trying to make it tell by some eccentricity, which is positively by most people considered to be originality. This finickyness or vanity may be noticed in the continued attempts at trying to break up the outline of buildings; the useless dormers in roofs; tranverse gables on spires; imaginary windows and gables in turrets; useless buttresses and pinnacles; things that work not; arcadings on walls: all these things are ornaments misapplied: they are out of place, because they do no work. I maintain that anything put in for effect, which has no purpose or work to do, is wrong in all art. This is very plain when useless turrets are introduced: nothing offends the eye more; the desire to break up the roof, somehow, is so glaringly apparent. On this point I must call attention to the Renaissance chateaux of France, and the Queen-Anne houses in England: the roofs of the former are so picturesque and wonderfully free from sham, when the age they were built in is considered; their turrets, &c., have all a visible purpose; and the general vigour and breadth of internal arrangements, as well as the simple massive appearance of the outside, are worthy of careful study. And here I may proceed to speak of timber and brick construction, formerly so common in England, and so good and whole some when rightly applied. It would not be massive to build a house in this way; but a projecting window may be most admirably done in this fashion, if the base of it, the supporting bracket part, is only built of strong masonry; and in this work coloured round and square tiles may be admirably introduced as surface decoration; and this leads me to think of patterns on tiles, for I have never yet had time to consider metaphysically the cause of that mental disease and its nature which prefers quatrefoils to circles. There is something bordering on imbecility in the mind that delights in the finickyness of a quatrefoil. The old timber and brick buildings must be studied; and here is also a chance for polychrome of a severe kind done in tiles. There is nothing finicky in a love of detail, of rendering nature carefully: on the contrary, it requires great manliness and hard work. We observe in Dürer's engravings the most minute finish and softening down of edges by fine, delicate, minute lines; and then in his woodcuts a firm, thick, minute outline, and no attempt at shading down; hence Mr. Ruskin, in his "Principles of Drawing," recommends the practice of that fine shading and softening down of edges, knowing that the man who can do that rightly, as Dürer did, will also be able to draw with the nervous, firm, thick line of a Dürer or Van Eyck when necessary. In former notes I have complained of the vile copyism of modern conventional foliage. First it is Third Pointed, then Italian Gothic, then French Gothic. What is it to be next? I wish for Heaven's sake men would not draw at all, if they cannot conventionalize for themselves. I know of one excellent school of conventionalism, now, at this moment; and it is adapting Indian, Oriental, and Japanese work to English plants, animals, &c. It is wholly original, because it is not copied: it simply works in the spirit of Oriental work, and is full of fine colouring, vigour, and life; but it is not necessary for everybody to do this. I want to see everybody conventionalize in his own manner, without copying any former style. When you have settled the form of construction—and only one form can be right—then it is only in the ornament that an artist can show his originality and individuality. This cannot be gained by eccentricity, but must be simple and natural. We must have *natural* conventionalism. I have also spoken against the finickyness of mouldings; but in Norman work there is great depth and feeling in some. This is a trait that can never be obtained in turned work. Mouldings from the lathe must be simple, massive projections; and there should be no attempt at that sentiment of light and shade produced by the rough inequalities of good hand-work. Some of the Queen Anne furniture fulfills this principle to a great extent; and it is

only then bad when the strength of post is decreased by too deep cutting. In fact, as a rule, we should never cut in beyond the main width.

Now, in all work we must first think what we have to do, and then do it in the simplest, most natural, and most English manner. To be English we have only to be natural. We may learn things elsewhere; but we must, as a whole, show and take a pride in our nationality. The mere building of roofs run to seed, which we call spires, is not a good national trait: it is a mere vanity, and is unnatural, because all we want is a plain roof to a tower. To be an Englishman it is necessary to be honest, and to be honest we must be natural. My desire is to see a true, natural, and national spirit pervade our work,—a true individuality, and no copyism. The revival of any lost material and invention, of any new method of work, I leave to cleverer heads than mine: the archæologist and chemist must do this.

As regards music, we find the same triviality general throughout the Italian Rossini school, the one on which all English ideas of singing are founded. It consists of an over-polish of execution, which Wagner and young Germany oppose: they desire a rough vigour of voice. In musical composition triviality consists in the bravura of Rossini and in the "sensation" noise of the Verdi school, with its waltz melodies of excessive ear-tickling quality, sensual to the last degree. Wagner brings against this the earnest descriptive music of Beethoven's D Mass, where the orchestra expresses the sentiment by counterpoint,—a descriptive harmony, in fact;—and with Wagner himself the singer is simply a declaimer of the operatic poem, and the sentiment is given entirely by the orchestra. There is no vocal melody, but a melody of counterpoints. The sound charms the ear; but there is no repeating this descriptive harmony, any more than you can retain in your mind all the colours that make up a lovely landscape. It is no melody to be whistled. It does not signify how genuine, massive, or excellent any ornament is; but if it has no purpose, no work, it is out of place—it is a conceit and vanity: if it has no moral worth, it is useless. The man to appreciate severe work,—the vigour of Leys,—is the mind to love Wagner's music; and modern opera audiences are as far removed from this as modern art-love is removed from an earnest interest in severe work generally: it does not suit the ease-loving sensuality of this age. A. W.

THE SURREY-SIDE THAMES EMBANKMENT.

The report of the Thames Embankment Commission (Surrey Side) has been issued. The commission submit,—

That an embanked roadway of about two miles in length should be formed between Westminster Bridge and Battersea Park; commencing at the east abutment of Westminster Bridge, on a viaduct of an ornamental character, opposite the Houses of Parliament, as far as Bishop's-walk; thence on a solid embankment to the north side of the London Gasworks; continued under Vauxhall Bridge, as far as Nine Elms, on a viaduct; and thence upon a solid embankment, passing under the land arch of the railway bridge; and terminating at the approach road of the new suspension-bridge at Battersea.

Dredging of the foreshore in the front of the embankment to a level of 5 feet below low water will (particularly at Lambeth and Nine Elms) improve the navigation; compensate to a great extent for the loss of tidal water displaced by the solid portions of the embankment; and, as the foreshore will be formed, under the viaduct, of solid material, and on a suitable incline; it will tend to prevent accumulations of mud where the shores are flat or uneven.

Communications with the embankment would be made at Stangate, by prolonging Palace New-road, and widening Bishop's-walk on the western side, Church-street, Broad-street, Vauxhall-row, High-street, Battersea-road near Nine Elms Goods Station, New Park-road leading to Wandsworth, and the station of the London, Chatham, and Dover Railway Company.

The estimated cost of this work, including land and compensation, is 1,100,000*l*. With reference to the means by which the cost is to be defrayed, the commissioners consider that the coal and wine dues should be appropriated for such a further period as may be necessary for the purpose.

Such is the plan which the commissioners have proposed, and it is hinted that delay in carrying it into execution will increase the cost, in consequence of the constant increase in the value of the property.

On considering this plan, it seems clear that it will cause a great improvement to that part of the southern metropolis lying between Westminster Bridge and Battersea Park; but it leaves the large space between Westminster and Deptford with but little chance of improvement; and we fear that the carrying out of this embankment by piecemeal will prevent the good that could otherwise have been done by improving the current of the Thames, and securing a permanent flow, which would be a means of preventing shoals and other accumulations. Supposing that a uniform and satisfactory method be arranged, so that persons who wish it may be allowed, at their own charges, to push their premises so far into the river as would, under the present circumstances, be necessary in connexion with any effective embankment, such projections would be sure to cause obstructions and the formation of mud-banks; and it must be borne in mind that the property here will also increase in value, and that every year of delay will add to the difficulty and cost of an undertaking which must eventually be thoroughly carried out.

ON ANCIENT MOSAICS FOUND IN BRITAIN.

At the recent meeting of the Archæological Institute, at Worcester, Dr. Wollaston made some remarks on this subject, in lieu of a paper he had prepared,—time failing. He gave a brief account of the origin of mosaics in Greece, and the adoption of the art by the Romans. While ancient paintings in fresco and on canvas have generally perished long since, mosaics have resisted the encroachments of time, the decomposition of chemical agency, and the invasion of insects. Protected by "mother earth," and buried for ages, they have come to life at various stages of their existence, and have thus afforded a collateral testimony to the truth of those historical records which have been bequeathed to posterity, inscribed on papyrus, vellum, or tablets. The mosaics have thus given evidence of the state of art in ancient times, and preserved the lineaments of the physiognomy of Greeks and Romans as distinctly as sculptured marble. While the paintings of Apelles and Zeuxis have "left not a trace behind," the marbles of Phidias and Praxiteles remain for ever, and are now, after 2,000 years, perfect models of the art and taste of the Greeks,—models which modern art has never surpassed, and seldom approached.

The beautiful art of mosaic, fabled to have been taught the Greeks by Apollo and the Muses, was practised in all the Greek cities and islands; in Asia Minor, at Halicarnassus, Cnidus, Carthage, and along the coast of the Mediterranean. The Romans were instructed by the Greeks, and decorated their public buildings, their temples of worship, theatres, palaces, halls of justice, and baths, in rich and splendid designs. The wealthier citizens also tesselated their houses with these ornamental pictures: they embellished the walls of the principal apartments and their pavements. To this day, the superb tesselations of Rome exhibit the genius and skill of the mosaicists. It is, however, among the ruins of Pompeii, happily preserved in a marvellous manner, that the mosaic art has been found in the highest perfection. Here the tesseræ are so minute, and shaded with so much delicacy of colour, as to evince the manipulative skill of the artist, and exhibit pictures equal to any ever painted in oil or fresco. From the Augustan age to the dissolution of the Western Empire, soon after Constantine,—a period extending to nearly 400 years,—the mosaic art flourished in Rome and Italy. The magnificent baths of Titus, Caracalla, Diocletian, Constantine, and others, were richly decorated with pictorial designs on the walls and on the pavements; and successive emperors vied with each other in ornamenting their private villas and public edifices in the costliest manner. The Romans carried this art wherever their triumphant arms led them,—to France, Germany, Spain, and Britain. Britain was mainly indebted for the works of art to Hadrian, who had distinguished himself pre-eminently as a great promoter of architecture, sculpture, and painting. His splendid villa near Tivoli, the Mausoleum at Rome, the Temple of Jupiter at Athens, attest his encouragement of all the arts which minister to magnificence and elegance.

Other emperors were benefactors to the country. To Titus, Vespasian, Agricola, Constantine, the people were most indebted for their munificence. When the Romans left the country, at the end of the fourth century, it was over-run by the semi-barbarous Saxons, who eradicated everything Roman,—the laws, language, the arts,—and destroyed almost every vestige of their predecessors. What the fanatical and rough Saxon left untouched, the benign protection of the tomb shrouded, and the remains of Roman art were preserved for the admiration of posterity.

London was even then a place of importance; and numerous mosaics have been discovered, but everywhere broken by the ignorance of the labourers, and beautiful fragments carried off by depredators. There are a few specimens in the British Museum, taken from beneath the Bank of England, from Leadenhall-street, Broad-street, Thames-street. The public is essentially indebted to the researches of Mr. Roach Smith, for his valuable work on Roman London.

Dr. Wollaston was present at the excavation of the mosaics dug out from under the church in Threadneedle-street, by Mr. Moxhay, and remembers the thrill of delight which pervaded the spectators who saw the pavement of the supposed baths gradually being exposed to the light of day, as spadefulls of earth followed each other, until the whole splendid mosaic burst into view, which had been hidden from the sight of man during the long night of sixteen centuries.

Dr. Wollaston then took a rapid review of the superb mosaics at Horkston, Woodchester, Cirencester the ancient Corinium, at Wroxeter the ancient Uriconium, and other places, especially those in Gloucestershire, Wiltshire, Somerset, Hampshire, and Sussex. The extraordinary variety and beauty of these mosaics surpass belief: nothing can exceed the interesting theory of Orpheus, delineated no less than four times at Barton, Woodchester, Winterton, and Withington. Orpheus, the son of Apollo, in the centre of the picture, is taming the wild animals of the forest, which surround him, by the melody of his harp; thus foreshadowing the influence of music in the progress of civilization and social enjoyment.

The "Seasons of the Year," and the "Days," are favourite subjects. A fine specimen is now in the museum of Lord Bathurst, at Cirencester. Spring, Summer, and Autumn are portrayed with the appropriate symbols of the time of the year—Spring, with flowers and the swallow; Summer, with ears of corn around the head and a sickle in her hand—symbols of Ceres,—precisely like one found recently at Carthage, by Dr. Davis, in a representation of the seasons, in the Temple of Æsculapius: Autumn was indicated by fruit, which garlanded the head like a wreath. Winter was entirely perished, but fortunately has been found at Bognor, in Sussex, where the other three seasons were entirely in fragments. Winter is displayed in a characteristic manner: the head and shoulders are muffled up with a close-fitting cap and dress, like a monk's cowl; and a leafless branch is held in the hand, as a sign of the cold season. In another mosaic, at Littlecote, the four seasons are depicted by four females riding on animals in full chase: Spring, a female riding on a leopard, with a rose in hand; Summer, a female riding on a deer, with a swan on her lap; Autumn, a female riding on a bull, with grapes in her hand; Winter, a female riding on a goat, with a leafless stick. At Bramdean, the "Horæ" or "Days" were represented by figures, in an octagonal frame, of Apollo, Luna, Mars, Mercurius, Jupiter, Venus, Saturnus, and Cybele—the Romans reckoning eight days to the week.

Mr. Roach Smith mentions that a bronze forceps was dug out of the mud of the river Thames, having figures of the "Days" upon it as those in the Bramdean mosaic.

It is impossible to describe all the various allegories and symbols of Greek and Roman mythology delineated in the mosaics of Britain; but I cannot conclude without expressing my surprise and admiration of the splendid mosaic of the four seasons, now in the Great Exhibition, designed by Mr. Wyatt, and executed at Broseley by Mr. Maw with great skill. The exquisite manipulation and brilliancy of colouring and effect prove that the finest mosaics may be produced in this country. It is worthy of the direct patronage of the Government to perpetuate the record of great historical events by means of imperishable mosaics.

The frescoes of the House of Lords are rapidly crumbling to pieces: they are a perfect failure; but now the Government has an opportunity of promoting the ancient method of mosaic painting—an art which has brought the past history of man before our eyes with all the freshness of a recent production. The mosaics of Halicarnassus, of Carthage, of Constantine, and of Pompeii, recently excavated, demonstrate the utility and beauty of the mosaic art.

MOSAICS *VERSUS* FRESCOES FOR THE HOUSES OF PARLIAMENT.

Now that the question of the permanency of fresco decorations is being discussed, with, I fear, very little chance of a definite or satisfactory conclusion, I would ask the favour of a few lines of your valuable space to suggest the advantages of another decorative medium for walls, of unquestionable stability, and of a nature capable of representing the highest art. The circumstances under which fresco decorations can be rendered permanent appear never to have been thoroughly understood. The permanency of frescoes of all ages has been singularly capricious. Taking the Italian frescoes for example, here and there we have instances of their remaining almost as fresh as when executed; and, again, other examples, under apparently precisely similar circumstances (*e. g.*, the beautiful Leonardo da Vinci at Milan), which are rapidly falling to decay. Admitting the possibility of a thoroughly permanent fresco, is not the very narrowness of the limits (as to climate, local peculiarities, &c., &c.) under which such permanency can exist a weighty argument against employing it as a medium for such expensive art as that forming the wall-decorations of the Houses of Parliament?

Nothing could be more deliberate and careful than the consideration that was given to the mechanical part of the work before the Westminster frescoes were commenced; and yet in ten years they are falling to decay. We may experiment again and again, but have we now any additional data which will lead us to expect better results? And, under any circumstances, a whole lifetime must elapse before even the narrowest limits of permanency can be proved. Mosaics for the last 2,500 years have, in an infinite variety of forms—from the coarsest tesselation of the Roman pavements, to the beautiful and delicately fine wall mosaics of Pompeii, and the almost microscopic mosaic inlay of the Mediæval and modern Italians—been the only absolutely indestructible medium for pictorial art. The wall mosaics of Venice, Ravenna, and other Italian cities, though coarse in mechanical execution, impart to their buildings a glory and richness peculiar to them alone. Why should not mosaic be adopted as a medium for both internal and external decoration in our own public buildings, and some form of it be substituted for the perishable frescoes in course of execution at Westminster? A committee of noblemen and gentlemen, including the Marquis of Salisbury, Mr. Layard, M.P., and others, are now engaged in investigating the subject of mosaic manufacture, with a view to encourage its use for internal and external decoration. The examples already produced under the auspices of the committee, as also the other specimens of English pictorial mosaic in the International Exhibition, give abundant promise of its success as a new branch of British industry; and whilst accuracy of form and finish of the tesseræ, and infinite range of colours, are characteristics of the British manufacture, the cost of its production is very much below that of any other description of mosaic; indeed, the means are at command of producing exact reproductions of the most detailed cartoons, at a cost scarcely exceeding that of frescoes; and the beautiful reticulation of fine lines defining the individual tesseræ gives the design a richness of effect which no fresco or hand drawing can possess. Another great advantage of mosaic over fresco for the Houses of Parliament would be, that the mosaics need not be executed on the spot, as they can be formed into slabs at a distance, and fixed *in situ* in a few days. The committee above referred to are more particularly engaged on the subject of external mosaics for the Exhibition building; but the result of their experience will be equally applicable to the Houses of Parliament; and it is to be hoped that, before the Fine Arts Commission come to any determination respecting the alleged decay of the frescoes, they will wait the results of the experiments that are in progress at South Kensington, and fairly consider the relative merits of mosaic and fresco for the yet incomplete decorations of the House of Lords. It is, perhaps, a fortunate circumstance that most of the artists who have promised cartoons for the South Kensington mosaics are those that have in hand the frescoes at Westminster; so that, should a decision in favour of mosaics be arrived at, the artists whose assistance would be called for will be well versed in the specialities of the new material.

It is proposed to compose the mosaics at South Kensington of ¼-inch by ¼-inch cubes; but of course much smaller would be suitable for internal work of lesser proportions; and these, and any special sizes and forms, can be readily executed by the process followed in the manufacture of the tesseræ used in the experimental mosaics at the International Exhibition. G. M.

STATE OF METROPOLITAN CANALS.

At this season of the year—in fact, at all seasons—it is of consequence to keep as pure as possible the streams of water in the canals which pass for a considerable distance through populous districts of the metropolis; and yet there is frequently great reason for complaint. The water moves very sluggishly, as may be seen by noting some of the objects which are left to float upon the surface. For instance, for two days a large dead dog continued to move to and fro, for about 50 yards below the same windows, in a basin (of large size) of the Regent's Canal, near the York-road, Islington. The water is as nearly as possible stagnant. There is doubtless difficulty in the dry summer-time in giving the stream such an amount of current as would change the water with sufficient quickness. Considering this, the greatest care should be taken to prevent all offensive matters from flowing into the canals. An extraordinary number of dogs, cats, &c., are thrown into the Regent's Canal; and at times a boatman may be seen collecting these offensive objects, and conveying them from the view; but now, when this operation would be most useful, it seems to be less carefully performed than at other times.

The steam traffic on the Regent's Canal continues to increase; and steam barges may be constantly seen towing after them three, four, and sometimes five and six loaded vessels, at a much quicker rate than can be managed by the horse power.

THE PICTURESQUE IN ARCHITECTURE.

A NEW CLOCK-TOWER IN PARIS.

It would appear, judging from the effect of a recent erection in Paris, that the very plainest modern style may, by judicious treatment, be made to develop such features as will necessarily render it "picturesque," in the ordinary acceptation of that term; that is to say, by causing it, in the first place, to present an unusual variety of outline, through the medium of projections and recessions, as will essentially vary the main form of the mass, and impart to it certain broad effects of light and shade.

Secondly, to enrich it with appropriate details, which, while they pleasingly attract the eye, at the same time arouse curiosity, and cause the attention of the spectator to dwell with satisfaction on the effect of the general design, while it is induced to seek for other remote features; being tempted forward by those prominent ones which first caught the eye.

The *muraille d'enceinte* with which Louis Philippe enclosed Paris, along with large tracts of suburban land as yet not built upon, and also several detached suburban villages, gave a great and sudden impulse to building beyond the old limits of Paris. The vacant spaces were rapidly filled up, detached villages grew rapidly forward in the direction of the solid masses of the city, and new districts were formed, each with its *mairie*, as in the arrondissements of the old city. Among these Le Petit Mont-Rouge became the fourteenth arrondissement; and on its *place*, bordered with a quadrangle of limes, a suitable site was found for the erection of a mayoral residence, suitable to the increased dignity and importance of the place. The building then erected was of sufficient size, and presented a certain originality of treatment, the more worthy of remark, as the originality was achieved by the simplest means, and without the aid of any so-called decorative features. It was severely simple, and yet it bore evidence, though as plain as an ordinary house, that it was the work of a thoughtful and tasteful architect.

Le Petit Mont-Rouge again increased and prospered; and it was thought, the other day, that, as a public clock was required, it afforded the opportunity of adding a clock-tower to the pretty but simple mayoralty. A certain impress of taste in the building, plain as it was, appeared to lend itself to this decorative addition; and the result has shown that appearances were in that case not deceptive. From a raised perron, in the centre of the principal front, a pavilion of three arches now rises, forming an appropriate porch to the principal entrance. These arches are very sparingly enriched with appropriate and delicately designed ornament. From this arched pavilion rises a square tower, on the front side of which is the clock. This part of the tower is, with severe simplicity, enriched with four high, and nearly detached, reliefs, representing the four principal epochs of civic life, in a military country;—infancy—the conscription—marriage—death. The first epoch is represented by a woman carrying an infant; the second by a youth, in a civic blouse, seizing the national standard; a veiled girl, wearing a bridal wreath, represents marriage; while the last is represented by a woman placing a wreath of *immortelles* upon a tomb; all these figures possess considerable merit as works of sculpture. The square tower is surmounted, above the clock, by a circular turret crowned with a gallery of columns supporting a small dome;—the effect of of the whole composition being exceedingly pleasing. It must be added, too, that the new feature is made to accord so well with the main building in general simplicity of feeling, that it hardly seems an extraneous addition, not provided for, nor even contemplated, in the original design of the work to which it is attached. A time is coming when successful imitation of former styles—Mediæval or Classic—will not be sufficient to found the reputation of an architectural artist, or even to sustain a repute already established. We shall be glad to see an English clock-tower grow up somewhere, in which this same kind of illustrative decoration as that which we have mentioned may be carried out.

THE OVERCROWDING OF RAILWAY STATIONS.

It is impossible, while travelling by railway, to avoid noticing the increased bustle and seeming confusion and danger which are presented at the chief stations; and, without referring to statistics, it is easy, by the eye alone, to form some opinion of the vast and constantly-increasing numbers who avail themselves of this means of transit. In these Exhibition times, the crowds which throng the London termini form an extraordinary sight.

At King's-cross, the Great Northern Railway Company have extended their premises; and at London Bridge and elsewhere it has also been necessary to increase their accommodation. Nevertheless, there is a great deal of confusion, particularly in the arrangements for receiving money and issuing tickets. As regards the platforms and the lines, the complication is constantly increasing; owing to the opening out of the iron road in new directions. At King's-cross terminus, trains are filled and emptied of passengers in the midst of the numerous crossings, and away from platforms altogether; and we have seen three excursion trains and an ordinary train, at one time, waiting their turn at Holloway to follow others to King's-cross, clear of express trains. At the junctions of branches with main lines, there is constant cause of delay and risk of some terrible accident.

At the Fenchurch-street station of the North London, Blackwall, and other railways, there is good management with plenty of space on the platforms; and the thousands of passengers who arrive here daily pass out with ease. The places where the money is received, and the entrance, are not so well planned; and it is not unusual to see as much struggling here for tickets as there is at the pit entrances of the best theatres. At the Stepney station on this railway, where there is formed a junction of several lines, although some changes have been made lately, the arrangements are insufficient for the traffic, which is increasing in this direction. From Kentish-town, Camden-town, Islington, Hampstead, and parts further west to Kew, multitudes flock this way to the City: from Loughton, the Docks, and Blackwall, the passengers also come; and North London is continually growing in population, and the open spaces are becoming covered with houses and business premises.

Before long the numbers who pass this way to the heart of the metropolis will be, in all probability, more than double the present amount; and without greatly increased accommodation, the railway business must be brought to a dead lock.

It is an unfortunate fact in connexion with some of these junctions, that there seems to be a practice of throwing the responsibility from one authority to another. For instance, in consequence of having to change trains at Stepney for Blackwall, and to wait until certain other trains have passed, and the right one arrive, the passenger is often delayed twenty minutes or upwards on this account alone, in a journey from Islington to Blackwall,—a delay which might have a serious effect in the proper management of business; and if complaint be made, there is difficulty in getting attention paid to it: the North London managers say they cannot help the delay at Stepney: at Blackwall they have nothing to do with

it; and at Fenchurch-street they cannot prevent the delay of trains coming from the east. In such a state of matters as this, the lives and limbs of many depend entirely on the perfect working of the telegraphic and other signals, and on the most vigilant attention on the part of the drivers and guards.

A "bird's-eye view" of the approaches to the stations of the chief railways shows courses of lines which are bewildering to the eye; and these, with switch turnings, &c., are constantly being added to. A sight of these suggests the idea that ere long a reform *must* be made in the arrangements of railway junctions and stations, in order to insure the safety of the public.

CONNEXION OF METROPOLITAN RAILWAYS.

A model, by Mr. Asprey, illustrating a plan devised by that gentleman for connecting all the railways north and south of the Thames, relieving London Bridge entirely of all traffic going to or from the various railway stations, has been recently placed in the International Exhibition, Class 10.

Mr. Asprey proposes to run a line of railway from the London Bridge station to the Fenchurch-street station, crossing the Thames by the side of London Bridge on the east, with branch on the south side to the Charing-cross line, and a passenger station near the Monument, either with or without an hotel connected.

The through traffic might thus be accomplished without changing carriages. This plan would render unnecessary the bridge and extension from the Charing-cross line to Cannon-street, for which an Act of Parliament has been granted and the works commenced: the same objects being obtained at a saving of cost, with the important advantages gained of not only carrying the West-end traffic into the City, but right through to the Blackwall and all other lines in connexion, without changing carriages: forming a connecting link between the whole system of railways north and south of London. This would entirely effect the one great necessity of the day, viz., the relief of the traffic of London Bridge. Not one person, or conveyance of any kind for goods or passengers, would be required to cross the bridge for either of the railways, whether the destination were far or near, home or continental; the stations remaining as they now are, with the addition of one new passenger station on the Monument side, between Thames-street and the river, or at any other more convenient point.

Our metropolitan railway system is but a fortuitous concourse of ill-placed lines, very discreditable to the age.

THE BEELAH VIADUCT.

In mentioning the model of this viaduct in the Palace of Art and Industry we expressed a desire to have some particulars of the mode in which it was erected in such a remarkably short time—four months: these have been afforded us by Messrs. Tregelles & Taylor.

The viaduct is situate about four miles from the town of Brough, in Westmoreland, and carries the South Durham and Lancashire Union Railway over one of the wild mountain gorges of Westmoreland. The engineer was Mr. Thomas Bouch.

It consists of fifteen piers of varying heights, according to the section of the valley; each pier being composed of six hollow columns, placed in the form of a tapering trapezium, and firmly braced together with cross-girders, at distances of 15 feet perpendicular, and by horizontal and diagonal wrought-iron tie-bars.

The columns are 12 inches external diameter, and of varying thickness, from 1¼ inch to ⅜ inch, according to the height of the pier and their position in it. The columns are placed at distances of 50 feet centre to centre, in the breadth of the pier at the base, and taper towards each other, until at the top, immediately under the platform girders, they are 22 feet apart, from centre to centre.

The weight of the whole viaduct was—Cast-iron, 776 tons; wrought-iron, 398 tons; and the superstructure contains 12,343 cubic feet of Memel timber.

The mode of erection adopted by Messrs. Gilkes, Wilson, & Co., was novel. They used no scaffold; but, having prepared a crane, with a gib of sufficient length to reach from the abutment over the first pier; and, of course, from the first pier over the second, and so on; they commenced the erection by setting the first pier from the abutment, on the Brough side of the valley. The crane was balanced by a shifting weight-box, so that each piece of the pier, whether light or heavy, was counterbalanced as it swung; and they were thus enabled to lower it slowly and steadily to its place whilst it was swinging round from the point of its first suspension. As soon as the first pier was erected, they placed two balks across from the abutment to the pier, and ran the girder (which was placed on two low bogie waggons) over, dropping it into its place with the assistance of the crane, by which each end of each girder was lifted and lowered.

On the completion of the first span the crane was moved forward, and the erection of the second pier was commenced,—not a single accident occuring during the whole erection, and not a man receiving any injury.

Some planks were placed upon the cross-girders, which, with some hand-ladders, enabled the workmen to go up and down readily. In the erection of this important work there were about 130 men engaged.

The wrought-iron work cost 22*l.* per ton, and the cast-iron work 11*l.* per ton.

NEW CHURCH FOR BATTERSEA.

The foundation-stone of the Church of St. John, Union-road, Battersea, was laid by the Ven. Archdeacon of Surrey, on Wednesday last. The church is designed in the Early English style, with nave and north and south aisles; the chancel being formed by the continuation of the nave, and terminated by a semi-octagonal apse. Accommodation is provided for 600 adults and 100 children: the greater part of the latter are situate in a small gallery at the west end of the nave. *All the sittings are free.*

The nave roof is open to the collars, and supported on hammer-beam trusses, with curved braces and wall-pieces resting on moulded stone corbels.

The piers of the nave are of Bath stone, and all window and door heads and jambs are also of Bath stone. The exterior is faced with picked grey stocks, relieved by red brick bands and arches, with intervening courses of block bricks and Bath key-stones, sunk and moulded. The three gables of the west front are terminated by crosses, and divided by a pair of octagonal bell-turrets of Bath stone, 66 feet in height to the top of the finials. The internal dimensions are as follows:—Nave, 58 feet in length; chancel, 26 feet; aisles, 73 feet; total width between aisle walls, 61 feet; height of nave to roof collars, 34 feet; height of aisles, 25 feet 6 inches.

The church is being erected by voluntary contributions, assisted by the Incorporated Society, and the Surrey Association for Building Churches. Mr. E. C. Robins, of London, is the architect; and Messrs. Sharpington & Cole, the contractors.

GUILDFORD COUNTY HALL, SURREY.

The new County Hall in Guildford has been opened. It is Late Gothic in style, and was built from the designs of Mr. Thomas Goodchild, architect, by Mr. Swayne. The *West Surrey Times* gives some particulars of the structure. The external walls are of Bargate stone from the pits near Godalming—a grey gritstone, partaking of the nature of the Kentish rag. The quoins and dressings are of Bath stone, from the neighbourhood of Corsham Downs. The frontage to North-street is 82 feet in extent, and to the Leapale-road 152 feet; whilst the total area covered by the building is 11,026 superficial feet. The building comprises a hall, to be devoted to the Criminal Court during the assizes; and to balls, assemblies, entertainments, public meetings, and the like, at other periods; a smaller court, to be devoted during the assizes to the civil business, and at other periods to less-important gatherings; a variety of commodious apartments, available for robing, consultation, and so forth; a spacious square room, intended for the grand jury; and large and appropriate rooms for museums, libraries, reading-rooms, class-rooms, and the like, constructed with a special view to the accommodation of the Literary and Scientific, and the Working Men's Institutes, should satisfactory arrangements be arrived at for their hire.

The great hall is 80 feet long by 37 feet wide. The roof is a semi-duodecagon; and from the floor to the centre of the roof there is a height of 40 feet. The hall is lit at night by seven star-lights suspended from the ceiling, twelve three-light brackets, and three nine-light brackets, supplied by Messrs. Defries & Co., of Houndsditch. The heating is accomplished by hot-water pipes, supplied from a boiler in the basement, by Weekes & Co., of Chelsea, and cost 122*l.* The roof, and all the woodwork, are composed of stained and varnished deal.

The small hall before referred to is intended for the Civil Court during the assizes. It is 50 feet long by 35 feet wide, and 25 feet high.

The iron-work of the building has been supplied by Messrs. Filmer & Mason; and the ornamental hinges have been produced by Mr. C. Page.

The contract for this work was signed on the 20th of August, 1861, the price agreed upon being 3,500*l.*, which was to include the warming and lighting, and a portion of the assize fittings.

MUSIC IN BRUSSELS.

An invitation has been issued by the Burgomaster of Brussels to the Philharmonic Societies, both of Belgium and other countries, as well as to the several *corps de musique* of the civil and military guards, in order that they may participate in the great musical festival organized by the town of Brussels, in conjunction with the Government, for the approaching fêtes of the thirty-second anniversary of the national independence.

The solemnity is to take place on Thursday, the 25th September, on the Place de l'Hôtel de Ville, at 10 a.m. The musical fête, to be continued throughout the day, with intervals of an hour, will be performed by the several societies, and concluded the same day.

On the 24th, there will be a *cortège* and procession for presenting the various bodies to the municipal authorities, who will offer them the wine of honour. Every society or *corps de musique* wishing to take a share in the programme is expected to write to the Burgomaster of Brussels to that effect before the 1st September, and to indicate the pieces proposed to be executed by them. If the number of societies be very great, this trial of musical strength can be carried on simultaneously in different points of the town.

NOTE ON THE EXHALATIONS FROM WOOD.

Everything in London continues to assume more and more gigantic proportions. The quantity of lucifer matches for one day's metropolitan consumption has often excited surprise: it is daily on the increase, as is also the quantity of firewood, which is enormous. Besides the parts of decayed merchant vessels, and other battered "old hulks;" the timbers and boards of demolished buildings which cannot be again worked into new ones, the salvage from fires, &c.; there are immense quantities of pine wood brought from over the sea as mere firewood. It is cut into pieces of about 3 feet in length, and of convenient thickness; so that, by means of steam-sawing machinery, they can readily be cut into the usual length of the bundles of firewood sold in the shops: they are then chopped, sorted, and tied up by boys, ready for sale.

During the summer months, the planks of wood, as they are unshipped, are brought in barges to convenient wharfs along the margin of the canals; and are stacked until needed for use. Some of these collections of firewood are cleverly built up, and are of gigantic proportions: one or two of these may be seen in the wharf of Mr. Humphries, in the York-road: one stack is at least 50 feet high, and is ingeniously constructed, so that the chief bulk of the materials is sheltered from the weather, and allowed to dry. The *architect* of this wooden work, with an eye towards effect, has caused it to assume something of the appearance of a military fortress, by leaving holes for imitation cannon, which point in a threatening manner towards the road. The building up of these towers, as barge- after barge-load of timber arrives, gives employment to a large number of youths and boys; and, during the whole year, the chopping and preparation of the firewoood—not only here, but also in other parts of London—keeps busy some hundreds of boys, many of them connected with the reformatory and other schools.

The manufacturing of the patent firewood—an invention by which the wood is cut into very small pieces, and joined together in a circular form by means of resin—is chiefly managed by boys; and it is astonishing to see the rapidity with which the process is carried forward by the nimble fingers and the machinery employed on the material, and the quantities of this prepared firewood which are constantly passed into the London market.

There are other large stores of wood for building and other purposes along the sides of the canal; and, as space is valuable, these also are built up to a great height, and the planks are so

arranged that they are but little exposed to the wet, while the air is allowed to ventilate through all parts.

We have just now more particularly mentioned these collections of timber for the purpose of directing attention to a peculiarity connected with them. Often, in certain neighbourhoods, especially if the place be closely confined, the writer has noticed a smell which he had attributed to imperfect drainage; but finding, in one or two instances, that there were no derangements of this kind to be complained of, he looked for other reasons, and found that there were stores, either greater or smaller, of green and other wood, in the localities where this peculiar smell was to be met with; and he has since found that from these collections of wood a considerable quantity of gas is thrown off, which pervades the atmosphere to some distance around. We do not say anything just now about the unwholesomeness of this, but simply mention the fact, so that it may explain a circumstance which might otherwise puzzle the sanitary inquirer.

THAMES EMBANKMENT.

An opportunity for beautifying the metropolis now presents itself, which, if neglected, never can recur. The question of the north side is already settled; and it is to be hoped that the Surrey bank will be also completed simultaneously with the other. What may now be dreaded is, that, through evil influence or jobbery, or want of judgment, the wide range of embankment to be gained, may not be planned and laid out so as to secure the most utilitarian, the most ornamental, and the most healthful results for the commerce and population.

That there is to be a causeway and some reserves for plantation, seems to be settled; but the mode of laying out and appropriating over 60 acres of land in this most valuable centre must probably await the creation of the terra firma. This is most certainly the course which any private person would adopt in reclaiming a waste or morass. In the outline already shadowed forth, it appears that all the streets branching from the Strand are to have an issue upon the grand rival route. Such an arrangement will immensely increase the value of such ranges as Norfolk, Surrey, Arundel, and Cecil streets, besides that it will afford great accommodation to the whole vicinage, as well as relief to the Strand itself; but it has gone forth that the noble proprietors of these urban estates are to be endowed or gifted with the privilege of extending their street ranges, in continuation, to the very verge of the main esplanade.

Any such concession would be manifestly wrong and inequitable: the enhancement in value of their house property by the new route; and, above all, by the opening and ornamentation of the reserves to be gained from slime and stercor, will be more than ample compensation; so that in no case ought the authorities to allow more than the addition of a single house plot, and that only upon a plan to be approved by them, for the purpose of giving a suitable character of elevation, as presented to and seen from the esplanade.

That wharfingers have rights which must be requited is apparent; but even these concessions should not be allowed to interfere with the general aspect and character of the grand design; for, compared with the magnitude and public importance of the scheme, such individual claims are insignificant, and ought to be settled by a money value.

The planted squares of London were hitherto denominated its lungs: the real breathing organ of the metropolis will hereafter be the noble Thames and the grand esplanade. Naturally along the river's course there is in the stillest atmosphere a moving current: the ebb and flow of the tide, and action of the stream, all tend to keep up the aërial action; and it is well known that shade trees, *when not massed too densely*, sustain an animating, healthy, and most grateful influence.

It would not be desirable to see the margin planted with straight lines of forest trees, such as Hampton Court, or the vistas of Kensington Gardens. These would, when grown to maturity, give the appearance of an alley or canal; and, if planted in close ranges, would harbour vapours and malaria; so that, what ought to be a cool, inspiring, and invigorating promenade, must become a dangerous, although, perhaps, an inviting retreat. No; the lines should be broken in detached groups, presenting openings to grounds such as the Temple and Whitehall, as also to the principal structures along the rivage. The new alluvial soil and river breeze must invigorate every species of vegetation; and limes, of all other trees, would be the most appropriate. What a luxury would grounds laid out as the Park-lane borders prove to pent-up Londoners! This need not occupy much space either; and still there would remain sites enough for *stores of substitution*, wharfs, and even public buildings, in some of the wide reaches; as between Whitehall and Hungerford, and other portions not interfering with Somerset House, the Temple, or the Adelphi. Trees, however, in apposition with those buildings, judiciously placed, would bestow a grace that any person of taste may appreciate.

The eyes of the public are now turned towards the proper and tasteful practication of all these projected works; nevertheless, there is misgiving, not to say a dread, that great functionaries, in their liberality, may pervert or mar this advent of a great boon to the metropolis, and, indeed, to all who inhabit or frequent London. The *mal-appropriation of a single building site would destroy the unity of the whole.* To build ranges of warehouses, or stacks of terraces and shops, would convert the river into a lagune, which, though wider many times than the canals of Venice, must in such case wear the same sombre and triste aspect. The temptation to sell ground by the foot, so as to realize (for somebody) even 50,000*l.* an acre, is too great to be resisted by cunning accountants. In this instance it would be profanation to alienate a single rod,—not even although the price paid for some City spaces were offered; and there the rate of 200,000*l.* per acre has been realized in some instances.

In the parliamentary debates on this question, just when the official strifes began, Mr. Ayrton cited an example of the *disposal* of Crown lands at Epping and Hainault Forests. There some 2,000 acres of land, within ten miles, and even seven, of the metropolis, were conveyed away to lucky purchasers in freehold at 11*l.* an acre!—less than the selling price of the commonest waste in remote localities!!

Is not this account of *stewardship for the State* enough to cause distrust in men who assume the management of public property?

The sale of all public lands or properties ought in all cases to be put up for sale by public auction. Not that there can be any suspicion of favouritism; but, by throwing open the competition to all, the possibility of that imputation is avoided.

Tender is a dangerous mode of disposal; and yet this practice obtains in all Governmental departments; generally, too, with the reservation that the highest tender shall not of necessity be accepted! A tender conscience ought to avoid such procedures.

To accomplish the great object in view with reference to the Thames, no precaution should be omitted. This embellishment of the river is but the commencement, as it would be the stimulus towards other improvements. New streets would open out the Borough, and add 50 per cent. to the value of property now slumbering there. The improvement of the Surrey side could in no degree depreciate the value of houses in the old City: on the contrary, its prosperity must have the effect of buoying up and increasing a healthy circulation of capital. The toll-bridges—those antiquated strictures on commerce—would soon give place to unfettered traffic; and the spirit of advance would soon make London what she might and ought to be,—the Queen of Cities.

NEGLECTED WORKHOUSE CHILDREN.

In a little book, entitled, "A Home for the Homeless," &c., by the Hon. Mrs. Wray, that lady refers to a phase of our workhouse system on which we have bestowed some thought, and have before now directed the attention of our readers: this is, the unsatisfactory results of the rearing of both male and female children in these establishments. Mrs. Wray notices that in our unions and workhouses there are said to be 27,523 orphan children—cheerless, friendless beings—who have to battle against the sins and evils of life unaided and unadvised; and over whom no friendly hand is stretched to save them from ruin, when driven forth to the world; and several cases are given which show the depraved and shocking condition into which young girls, who have been reared in the workhouses, have fallen. In one penitentiary are two girls, not yet thirteen years of age, who have been reared under the guardianship of their parishes, who have both gone astray. And it has been stated before the committee of inquiry on education, by Mr. Tufnell, that in one parish in London, on inquiry having been made as to what had become of eighty girls, brought up in the workhouse, it was discovered that, without one exception, they were all on the streets. Such facts as these are monstrously disgraceful.

We cannot, however, wonder at these results, when we consider the general management of those children, and the early age and disadvantageous circumstances under which they are cast, without friends properly to overlook them, to earn the means of living. These children, in many instances, are sent out as servants while mere infants in the knowledge and practice of all that is necessary for them to pass through life with credit to themselves and usefulness to others. Mrs. Wray truly says,—"They go into the world, with all its temptations and dangers, utterly unprepared to meet them. Once out of the union school, these orphan girls are sent forth from the workhouse totally unprotected and friendless: no hope stimulates them: they are looked upon as a degraded class, for the brand of pauperism is upon them. With some very rare exceptions, they are taken only by the very poorest householders—those who are glad to get a household slave, to whom they need give no pittance, or the very lowest."

Without a friend to see to them, and often ill fed, badly clothed, and harshly treated, it can scarcely be expected that these girls should turn out well.

For the purpose of protecting these young girls, when they have been taken from the workhouse, Mrs. Wray has opened the Brockham Home, which is within about two miles of the Betchworth Station, and where a number of children can be trained and fitted for service; and will be afforded a fostering care throughout the early years of their career. For each orphan child withdrawn in this way from the workhouse the parish authorities pay three shillings per week: the remainder of the cost of maintenance, and also of a practical and useful education, is defrayed by voluntary subscriptions. We would recommend those of our readers who are interested in this work to Mrs. Wray's book for details; but while acknowledging, in the present circumstances, the great necessity which exists for this kind of assistance, we must go to the origin of this very sad abuse, and once more complain of the bad system under which thousands of children are brought up in workhouses; for, by an ill-advised policy, with a view towards saving expense, these children are caused to be the pests of society, instead of useful members of it. The children are frequently not sufficiently fed; and this renders both boys and girls physically unfit for properly meeting the requirements of after years. But another great cause of mischief is leaving the training of children, to a considerable extent, to the pauper inmates of those workhouses, who are both mentally and morally unfitted for the performance of such duties. We require intelligent and well-principled persons for this work; and it will be found by experience that money spent in this way will in the end prove a vast saving. If pauper children are properly reared, respectable persons would be as glad to receive the girls as servants as they are now to take young women from the Foundling Hospital and other well-conducted establishments.

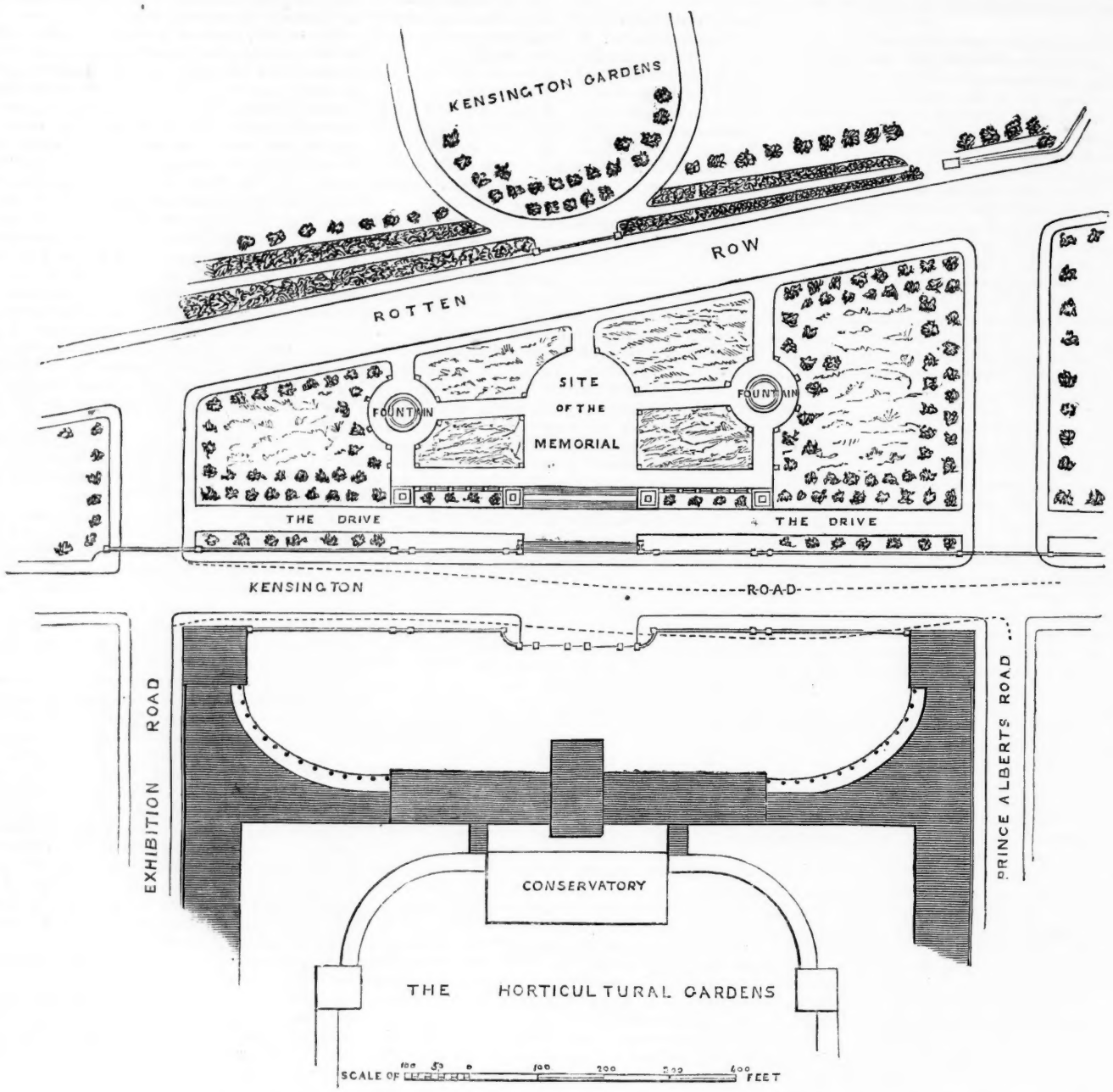
A MEDIÆVAL PARTHENON.

The Church of St. Mary at Bury, built in 1424, on the site of a former church of 1002, appears, from its chief dimensions, to have been intended as a copy of the Parthenon at Athens; taken, of course, from a written description, without the aid of drawings.

The extreme length of the temple and the church is 214 feet. The extreme width of the temple coincides with the outer boundaries of the church, apparently reserved for chantries, measuring from the north side of the tower to the street fence. This tower belonged to the old church, and most likely formed the limit of the church westwards. The length of the nave would then have corresponded with the east cell of the temple. The internal and external width of the church and Parthenon, exclusive of the peristyle, is identical, being respectively 62½ feet and 67½ feet. Measuring from the south face of the tower to a responding point on the other side of the church, we have a width of about 42 feet, equal to that between the columns of the Parthenon.

With regard to heights, the rise of the roofs in each case is the same; and the clerestory of the church is equal in height to the entablature of the temple. The entire heights of the two buildings are also equal.

W. Scargill.



PROPOSED SITE OF THE MEMORIAL OF HIS ROYAL HIGHNESS THE PRINCE CONSORT.

PROPOSED MEMORIAL OF THE PRINCE CONSORT.

To make complete the information on this subject which we, exclusively, laid before the public in our last,* we append the sketch plan referred to in the reports. It shows the proposed site of the memorial, and the arrangement of the ground next it in Hyde Park; also the position of the suggested Central Hall, between the memorial and the conservatory. The dotted lines show the present direction of the Kensington-road.

It seems necessary for us to point out that the Committee of Architects did not *suggest* the erection of a public hall in connexion with the memorial; and it will be observed that, in their report, they offer only a very guarded opinion upon it: leaving out of view the question as to the expediency or desirability of such a building in that situation, they simply say it could be erected there with perfect fitness, and would serve to screen the back of the conservatory and unsightly objects at present existing. It has been assumed that the scheme of the committee will fall through, unless the hall can be built. This, however, would seem to be erroneous. A design for the memorial, and the arrangement of the park around it with terraces, fountains, and flights of steps, are what the competing architects are specially called on to provide.

It is not correct, moreover, to suppose that the designs are to be restricted to groups of sculpture: reference is made in the architects' report to the necessity for a building to protect them, if of marble; and we still confidently look for just such a result as we proposed immediately on the appointment of the Queen's committee,—a memorial temple in which all the arts will combine to honour the memory of the Good Prince, and which will thus become also a record of the condition of the art amongst us in the nineteenth century.

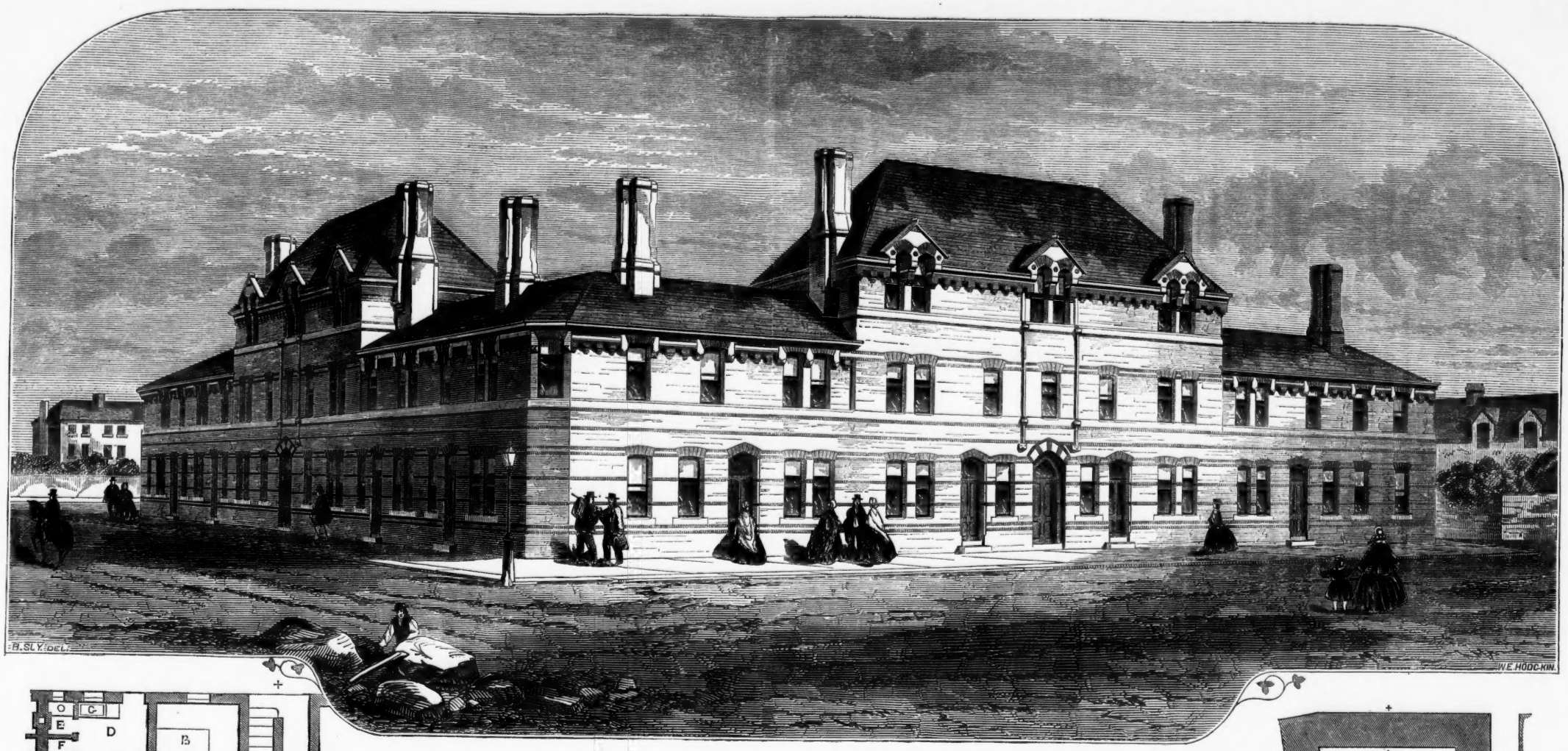
One portion of the proceedings of the Queen's committee we receive with unqualified commendation, and, indeed, gratitude; namely, the admission of the principle that everything belonging to the general effect of a monument, and its relations to surrounding objects or edifices, is likely to be better considered and treated by an architect than by a sculptor. We are disposed to believe this will also be the case even when the simplest monuments are required. The public fountain at Nismes, which we illustrated some time ago, the joint production of an architect and sculptor, Questel and Pradier, and the monument to the late Emperor of Russia, of which we more recently gave an engraving, are instances in proof of what we are saying. By this means alone can our public monuments be well adapted in their general features to what surrounds them, and be likely to be satisfactory to the public in other respects. The enforcement of this principle on the present occasion, we have reason to believe, may be attributed to Sir Charles Eastlake; and the public, no less than the profession, owe him thanks for it. We sincerely hope that the result in this case will prove confirmatory of the goodness of the principle, though even a failure would not weaken our own belief in it.

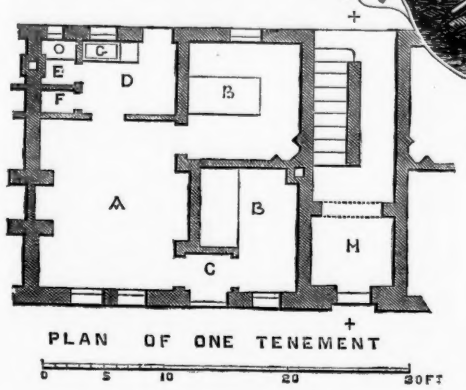
We repeat, it is always advisable, when a monument, great or small, is to be erected, to consult competent architectural experience; in conjunction with that of the sculptor.

* See p. 547.

THE NEW COMET.

The comet, which now blazes in the sky with constantly-increasing brightness, is the third of those mysterious visitors which have been visible to the naked eyes of all in England within the short period since 1858—a circumstance most remarkable;—for, so far as we know, there is nothing similar to this recorded: and there have been troubles and confusion, great and sudden wars, in this short time, which might renew the superstitious belief in the portent of comets. During this brief time there has taken place the short but great war of Italian independence; and, since the appearance of the last comet, a terrible war, which reflects its consequences throughout the whole civilized world, has broken out; while, now that the new comet—which was first discovered at Florence—has appeared, there are indications in Italy which may connect this recent appearance with momentous events. But, however this may be, in looking back to the accounts which have been given of the circumstances attending comets, they seem to have been associated with increased heat of the atmosphere; so that, as a general rule, we may expect a continuance of weather which will require us to use all sanitary precautions for the preservation of health. On clear nights, at ten o'clock p.m., the comet may now be seen, nearly due north, at a little distance below the polar star.

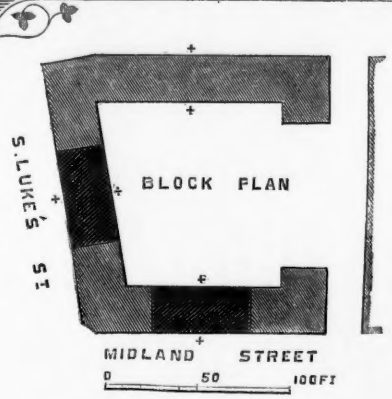




DWELLINGS FOR THE INDUSTRIAL CLASSES

KINGSTON UPON - HULL

H. M. EYTON ARCHT



THE HULL DWELLINGS FOR THE INDUSTRIAL CLASSES.

The Dwellings for the Industrial Poor of Hull, which form the subject of our illustration this week, were erected by a gift of 5,000*l.* from Miss Turner, of Hull, to the Right Hon. the Earl of Shaftesbury, for the purpose of enabling his lordship, as president of the Society for Improving the Condition of the Labouring Classes, to establish at Hull an example of suitable dwellings for the labouring poor of that town. The foundation-stone was laid on the 25th of February of this year, and the building is now nearly completed. It forms three sides of a square, with a court-yard in the centre, as will be seen by reference to the block plan, and is situate at the junction of Midland-street and St. Luke's-street, close to the terminus of the North-Eastern Railway in Paragon-street. It consists of two stories, with a centre of three stories in each of the before-mentioned streets, and contains separate and distinct dwellings for thirty-two families, of which five have one bedroom, nineteen two bedrooms, and the remaining eight three bedrooms. Each dwelling on the ground story has an entrance from the street, and one also from the court-yard, as shown by the plan of one of the tenements, of which A is the living-room; B, the bed-rooms; C, the porch; and D, the scullery, containing a sink and board, with coal-box under, marked G; a larder, F; and w.c., E, which has a dust-shaft on one side, with Hart's self-acting shoot boxes, through which all the dry rubbish is conveyed into pits in the quadrangle. Water is laid on to the sculleries and w.c.

The dwellings on the first story are similar to those on the ground story, with the exception of having only one entrance from an external stone gallery, constructed against the building in the quadrangle, and approached by stone stairs in the centre of each frontage, marked H on the plan.

Perforated valves, opening into flues carried up with the smoke flues, are provided for ventilation. Fox & Barrett's fireproof floors have been employed throughout the building; and all the division walls are of brick, no timber divisions being used. All the living-rooms and bedrooms are plastered, and coloured with a composition so as to render them washable. Gas is laid on to the external gallery and the stairs, and also to an ornamental standard in the centre of the quadrangle. The building is faced with white Trent bricks, with bands, cornices, &c., of red bricks, and Mexborough stone. The cost has been nearly 4,600*l.*, exclusive of the land. Mr. H. M. Eyton, of London, was the architect; and Messrs. Simpson & Malone, of Hull, builders, have carried out the works.

PARIS.

On the 8th of August, the inhabitants of Paris are promised the demolition of three theatres—the Cirque Impériale, the Folies-Dramatiques, and La Gaîeté. Shortly after, the houses expropriated for the completion of the Boulevard du Prince Eugène will be cleared away. Another notice announces the fall of the Convent des Barnabites, on the line of the Boulevard de Sebastopol, opposite the Palais de Justice. In the Avenue de Saint-Cloud demolitions are taking place, to disengage some of the fine hotels of the Avenue de l'Impératrice and circular street which surrounds the Place de l'Étoile. The Boulevard du Roi de Rome, which was carried some ten or twelve mètres below the surrounding surface, and terminated by a flight of thirty steps, is now in course of execution throughout its entire length. Hundreds of labourers are employed levelling and removing the heavy escarpments of sand and gravel, the earth from which is carted off to the low ground of the Seine.

At the corner of the Rue de la Parcheminerie, a short distance from the Boulevard Saint-Germain and the square of the Palais des Thermes, an edifice three stories high, with eighteen windows on each story looking upon the two streets, is rising. This structure is destined for a "Bureau de Bienfaisance," and a "Maison de Secours;" also important charity schools of all sorts.

In the principal thoroughfares in Paris, active progress is manifest in substituting, for the ancient candelabra, new ones bronzed by galvanic process, and surmounted by a round lantern of improved model.

The ancient lamp-posts, interspaced by 40 mètres diagonally, were 3 mètres 50 centimètres high, without the cock and burner; so that the flame was about 4 mètres (13 feet 1 inch) above the pavement. The new luminaries are placed only at 25 mètres from each other in the direct line: their height is 2 mètres 70 centimètres; the flame being only 3 mètres above the ground. The lantern is formed of curved panes, framed together by light brass ribs. A conical reflector crowns the whole, so as to throw a reverberated light on the pavement. Instead of the usual white metal lining, the reflector is internally covered with some new incorrodible coating.

GUERNSEY INTELLIGENCE.

Worked Granite. — Several slabs of worked granite, addressed to the "Farnbro' Station," have just been sent to England. They are intended to be used in the erection of a sepulchral monument. There seems to be some demand for worked granite, as now the Messrs. Bisson, of the Vale, are in England, engaged in erecting a monument from granite worked in their own establishment in Guernsey.

Rocquettes Church.—The foundation-stone of this church is near upon being laid. The Messrs. De Putron are the contractors. The local *Star* has the following intelligence on this church:—"Mr. May, in addition to a previous donation, has given the sum of 50*l.* British to the church now building at the Rocquettes, with a view to the substitution of a larger and more effective east window in place of three small lancets originally designed."

St. Sampson's Harbour.—There has been considerable agitation on the affairs of this harbour. 8,245*l.* are to be spent in improving its condition.

Harbour at Rousse.—A proposition has been made for erecting a harbour at Rousse, in the north of Guernsey; but it has been met with general disfavour.

Public Education.—Some discussion has been carried on in the local papers on the subject of public education. Influential persons in the island had designed to lay a duty on stone at St. Sampson's Harbour; and from the revenue thus created they proposed to appropriate 1,000*l.* towards public education. Such a step was resisted by the shipowners and others of St. Sampson's, who saw that their commerce would suffer by an additional duty, and the proposition up to this time has failed.

COMPETITIONS.

Bishop Hooper's Memorial.—We understand that the second premium has been awarded to Mr. R. L. Boulton, sculptor, of Worcester, for his model sent in competition for the statue of Bishop Hooper, to be erected in St. Mary's-square, Gloucester, on the spot where he was burnt. Seventeen models were sent in competition from London and other parts. Several competitors complain of inattention. Mr. Thornhill, of Dublin, obtained, we believe, the first premium.

Tunbridge Wells.—The provisional committee of the Public Hall Company have received, in reply to their advertisement, eleven sets of plans, from which one will be selected for the proposed new building.

SEWAGE OF TOWNS.

The select committee on the sewage of towns has just concluded its inquiries, and the report may be soon expected. The following is a summarized analysis of the evidence. As regards the value of town sewage, in reference to its ingredients, as compared with other manures, liquid and solid, the evidence proves that it contains the elements of every crop that is grown: it does not lose anything by evaporation: it comes into immediate action on the crop, and possesses an amount of heat which stimulates vegetation; and even its water is of great benefit for agricultural purposes. The Belgians consider the excretion of each person worth 1*l.* per ton. The sewage permanently improves the land, and has been applied, most economically by hose and jet, with great advantage to common grass, Italian rye grass roots, and grain crops. The grass so stimulated is grateful to cattle, improves their constitution, and increases the quantity and richness of the milk of cows, as the earth not only absorbs, but also deodorizes it, if it be not applied in too large quantities. Indeed, to be profitably used it must be applied in slight dressings; and so employed it will supersede the use of guano and artificial manures. It may be applied at any time of the year, except during hard frosts, to every description of soil which is naturally or artificially drained; and the most profitable returns, as in the case of all other manures, will be obtained, when it is applied to the best soil. There are in it matters of themselves injurious to vegetation, but they bear so small a proportion to the entire bulk as to be perfectly harmless. If applied as recommended—*i.e.*, in slight dressings—no nuisance would be created by its use; the earth, as has been said, deodorizing it; but it cannot with profit be manufactured into a solid manure.

PROVINCIAL NEWS.

Mickleover, Derby.—The old Manor House has been entirely demolished, and a new residence is now in course of erection on an elevated site, commanding a more extensive view of part of the estate as well as the surrounding counties. The style adopted is Old English, executed with red bricks and stone dressings. The foundations have been put in, and the contract for the carcase of the building has been taken by Messrs. W. H. & J. Slater, of Derby, builders. The whole is being carried out from a design and under the direction of Messrs. Giles & Brookhouse, architects.

Elvaston Castle, Derbyshire.—The Home for Aged Poor, erected and endowed by the Countess of Harrington, is now approaching completion. It is situate in the Park. The principal frontage faces the carriage-drive: the other frontage faces the village, and will contain a clock for general use. The institution will accommodate about twenty inmates. The style is Gothic, executed in best red bricks with stone dressings. The design was prepared by Messrs. Giles & Brookhouse, architects, under whose direction the works have been carried out.

SCHOOL-BUILDING NEWS.

Stradbroke.—New schools are about to be erected in this parish, upon somewhat the same system as those established at Helmingham, when Mr. Ryle held that living. At Stradbroke there will be an upper school for sixty boys, and a lower school for 140 children: the two schools are capable of being thrown into one when required. The style of the buildings will be Tudor; the walls being of red brick, relieved with ornamental patterns in grey. The roofs will be open timbered and stained, the floors deal, and the fittings birch. Attached is a residence for the master and mistress. The cost of the schools (independent of the master's house, which will not be erected at present) will be under 700*l.* The architect is Mr. R. M. Phipson, of Ipswich.

Stourbridge.—Boys and girls' schools and master's residence have lately been completed at Enville, near Stourbridge, at a cost of upwards of 2,000*l.*, which has been defrayed by the Countess of Stamford and Warrington. The site upon which the buildings stand, and also the land for the play or recreation grounds, were presented by Lord Stamford. Messrs. Wilson & Walker, of Nottingham, were the architects; and the design is Decorated. The schools, which are to accommodate about 100 scholars, are constructed with light cream-coloured brickwork, dressed with a local dark red sandstone. The roof is of open-timbered construction, boarded to keep out the extremes of heat and cold. All the interior woodwork is stained and varnished. The exterior is covered with slating, in green and grey bands alternately, each slate being cut to an ornamental pattern. Porches have been placed at the two entrances. In the western gable is inserted a three-light window, the upper part being arched, and filled in with three trefoils: detached columns are placed in front of each mullion with carved and moulded caps and bases. The central or main window projects from the rest of the building, thus forming a sort of bay recess in the interior, and is terminated by a gable. Every gable is capped with wrought foliated iron finials, manufactured by Mr. T. Brawn, Mediæval metal-worker Birmingham. The desks, forms, and master's and mistress's tables, have also been designed by the architects, and are carried out in style to correspond with the rest of the building. Mr. John Mee has executed the carving. The grounds are surrounded by dwarf walls, with wrought-iron railing in which the quatrefoil is a principal feature. Mr. R. Thompson, of Kidderminster, has been the contractor for the buildings; and the whole of the works have been carried out under the supervision of Mr. Walker.

Woodbridge.—The local trustees selected a plan from several others for the new grammar school, and allowed their choice to be exhibited for public view. Each of the trustees agreed amongst themselves to select three plans from the number sent in, and to compare their choice; and on comparison it was found that ten of the thirteen trustees had selected as one of those three plans the one now

adopted by the whole. The building will be in the Tudor style of architecture, of red brick with white quoins, in keeping with the new Seckford Almshouses. The basement contains a school-room, 44 feet by 24 feet; a class-room, 13 feet square; five rooms for senior scholars; an under-master's room, 9 feet 6 inches by 9 feet; a dining-hall, 25 feet 6 inches by 18 feet; head-master's study and library, 17 feet by 15 feet 6 inches; head-master's drawing-room, 21 feet by 14 feet; head-master's dining-room, 19 feet by 13 feet 6 inches; a kitchen, 18 feet by 16 feet; scullery, 13 feet by 9 feet 6 inches; and offices. On the first-floor are bed and other rooms. The front elevation has three rounded gables and a minaret with clock, and consists of two wings and centre—the servants' rooms and offices occupying one wing. The designers and architects are Messrs. Elmsby, Franey, & Haddon, of London.

Frome.—The foundation-stone of a block of buildings for a day-school, minister's house, and master's house, for the Wesleyan body, has been laid here. The site is near the police-station, fronting Bath-street. Only 200*l.* of the sum required to complete the erection remains to be collected. The architect is Mr. W. J. Willcox, formerly of Bath, and now of London. The builder is Mr. Ashman, of Leigh-on-Mendip.

STAINED GLASS.

St. Leonard's, Hythe.—The large east window in St. Leonard's Church, Hythe, has just been filled with stained glass, by Messrs. Pilkington, of St. Helen's. It consists of three lancets: the centre contains, in three medallions, from cartoons of H. Casolani, the Crucifixion, Resurrection, and Ascension, upon a diapered ground. The same treatment, with slight alterations, is adopted in the side lights; a single medallion occupying the centre of each, representing the Raising of Lazarus and of Jairus's Daughter. This window is the gift of Mr. Alderman Finnis.

St. Mary Magdalen's, Oxford.—A stained-glass window has just been inserted in the east end of the south aisle of St. Mary Magdalen's Church, in memory of the late Mrs. Baker Morrell. The subject represents incidents preceding the birth of our Saviour and St. John the Baptist; the Angel Gabriel appearing to Zacharias; Zacharias attesting the Birth of St. John; the Annunciation of the Virgin; and the Angel appearing to the Shepherds. The window was executed by Messrs. O'Connor.

St. Peter's, Sudbury.—A new window (executed by Messrs. Hardman) is being placed in the north aisle of St. Peter's Church, in memory of the late Isabella Louisa, only daughter of the Rev. J. W. H. Molyneux, the incumbent. It is to form one of a series of four windows, typical of Humiliation and Exaltation;—two on the north, representing Christ's Agony and Crucifixion; two on the south, representing the Adoration of the Magi and the Transfiguration. The east window, Christ sitting in Glory, presented by Mr. E. Stedman, some time since, completes the subject.

Hereford Cathedral.—A stained-glass window has been placed in this cathedral, as a memorial to the Very Rev. T. Musgrave, D.D., late Archbishop of York. The window in question is the large window immediately north of the choir altar. Architecturally considered, this window is of a Transitional character, of the latter part of the thirteenth century; and the glass is in keeping: it is a window of four bays, surmounted with trefoiled tracery, which contains in the upper one the armorial bearings of her Majesty as head of the Church. In others, beneath these, occur the arms of the see of Hereford, impaled with Musgrave's pastoral staves and mitre, as bishop thereof. In like manner, in the succeeding one, his arms are impaled with those of York, to which place he was translated, as archbishop. These are surrounded by other tracery. The main portion of this window, beneath these, contains eight subjects from the life of St. Paul; and, reading them horizontally, they occur thus: The "Stoning of Stephen,"—"Conversion of St. Paul,"—"Imposition of Hands,"—"Elymas the Sorcerer,"—"Sacrifice at Lystra,"—"Paul before the Elders and Apostles at Jerusalem," — "Paul before Agrippa," — and "Martyrdom of St. Paul." These are all bounded by columns, and surmounted by tabernacle work. Beneath this window is the Chapel of Bishop Stanbury. It contains two windows, which have been made to constitute part of the memorial in question, as they are embraced in the same view. These windows, like the chapel itself, are of the Tudor character, and bear a heraldic impression. This chapel abounds in its detail with shields, emblazoned with Christian emblems, also of the see, deanery, Stanbury, &c.; and the glass embodies the same character and feeling, by incorporating emblems of the Passion of our Lord, Stanbury impaled with the see of Hereford, his monogram, &c.; all surmounted with mitres. Mr. Warrington, of London, who is the author of the Clutton memorial in this cathedral, is the artist also of these works. The next work from his hands will be the Huntingford memorial, to be placed in the window at the east end of the south aisle, at the instance of Lord Saye and Sele.

Holy Cross (R.C.) Church, St. Helen's.—A stained glass window has lately been erected by the Messrs. Pilkington, of St. Helen's, in Holy Cross Roman Catholic Church, in the same town. It is of three lights, divided by a transom, each containing, under canopies, full-length figures of the Virgin, SS. Peter, Margaret, Alexander, Richard, and Queen Esther. The figures are after cartoons of H. Casolani, of London. Mr. Edward Johnson, of St. Helen's, is the donor of the window.

CHURCH-BUILDING NEWS.

Loughborough. — The fabric of All Saints' Church, including the tower, is to be restored. Mr. Herrick has offered to restore the tower, which it is estimated will cost about 1,000*l.* Miss Herrick will supply a new west window, which is estimated at 500*l.* Mr. Herrick and his sister, we may here remark, have built an infirmary here, at their sole expense.

Stoughton.—The church of Stoughton, Leicestershire, one of the prettiest village churches in the county, and a good example of Perpendicular ecclesiastical architecture, has during the past eighteen months undergone extensive repairs, at the sole expense of the Hon. Major H. L. P. Keck, the proprietor of Stoughton and other estates in its locality. The tower and spire have been taken down and rebuilt, and so have the north aisle, &c. A good new roof has been put on the north aisle; but an unpardonable and bungling deformity has been perpetrated, and one which will be a lasting eyesore and complaint to even casual observers, in the east and west windows of this aisle having been placed some 15 or 18 inches out of their proper central position; the consequence of which is, that the exquisitely-carved wooden bosses of the low cambered wrought principal of the new roof, instead of being, as they ought on architectural principles to be, immediately over the apex of each window (the boss being true to the central part of the principal), are 15 or 18 inches lopsided of it. The new stone work which it was found necessary to introduce in the rebuilding of the tower and spire has been washed over with a liquid made from the manure of cows: it is presumed to give it the hue of age, but which is a failure, and might have been advantageously dispensed with. Mr. John Firn, stonemason, of Leicester, has executed the stonemason's work and the architectural part of the business; Mr. Wm. Clifton, builder, of Leicester, the carpenter's work; Mr. M. Irving, of Leicester, the wood-carving; and Mr. Adlard, of Leicester, the plumbing and glazing.

Cheshunt. — The new church of St. James, Cheshunt, has been consecrated. The foundation-stone was laid on the 20th of July, 1860. The site is near Goff's Oak. The new building, according to the *Herts Mercury*, is in the Early Pointed style; erected in the form of a cross; and consists of a nave, and apsidal chancel, transepts, a south chapel, and a tower. The roof is open, with stained and varnished timbers, supported by carved stone buttresses. The seats are open, with inclined backs. The building is of brick, with Bath-stone dressings. Accommodation is provided for 421 persons, 286 free, and 50 reserved for children of schools. The architect, under whose superintendence the works have been executed, is Mr. W. G. Habershon, of London; and the builder is Mr. E. Clarke, of Tottenham.

Little Amwell.—The first stone of the new church at Little Amwell has been laid. The site, which has been given by the Marquess Townshend, is in the rear of the Townshend Arms Inn. The edifice will be a simple structure, built almost entirely of brick, and faced externally with red bricks. It will consist of a nave, 54 feet 6 inches long, by 24 feet 5 inches wide; and a chancel, 24 feet long, by 21 feet wide, terminated by a semi-circular apse. The arch between the nave and chancel will be of red and white brick, springing from pillars having carved stone capitals, bases, and detached shafts of Devonshire marble. The entrance to the nave will be through a north porch of open oak timber work, resting on brick walls. There will be a vestry on the north side of the chancel. The roof of the nave will be of open timber work, and that of the chancel of moulded wood ribs and ornamented plaster panels. The roof will be covered with tiles, and surmounted by a light timber bell-cot placed over the chancel arch and terminated by a shingle-covered spire. The seating will be of the simplest character, of open woodwork varnished. The cost of the church, with fittings complete, will be about 1,400*l.*; and it will afford accommodation for about 198 adults, and 57 children. The architect is Mr. Ewan Christian; and the builder, Mr. Walter Hitch, of Ware.

Bathwick.—St. John the Baptist's Church, Bathwick, has been consecrated. The architect is Mr. C. E. Giles, of London; and the builder, Mr. C. G. Mann, of Bath. The church consists of nave and chancel, with porch at the north-east angle, which forms the basement of the tower (at present unfinished); two small transepts on the south side, and vestry opposite. The length from east to west is 85 feet; breadth of nave, 21 feet. The church is designed to accommodate 300 persons, including children, for whom a place is specially reserved. The architectural style is First Pointed: the chancel end is apsidal. The windows are chiefly single narrow lancet lights; the west window being in three lights. The edifice is built of Bath freestone, from the Combedown quarries. The outside wall-facing is disposed in bands of smooth dressed stone, alternate with an axe-picked dressing, which relieves the uniformity of the surface. The east and west windows are embellished, both inside and outside, at the spring of the arch, with carved capitals, surmounting small shafts of red Mansfield stone; similar shafts being placed at the centre of the relieving arch of the windows of the nave. The church is furnished with uniform open benches of plain deal, stained and varnished, except those of the chancel, which are of pitch pine. The three single-light windows of the apse are furnished with coloured glass, by Messrs. Clayton & Bell, representing three subjects appropriate to St. John the Baptist. This window is the gift of a lady to the memory of her mother. The church will be warmed by one of Haden's stoves, fixed contiguous to the vestry. The roof is slated in bands of grey and reddish slate, surmounted by a crest edging. The roof inside, between the timbers, is coloured with a deep blue. The church is badly situate for effect, being below the level of the road leading to the Cleveland Bridge; but the road is an embankment.

Pontardawe.—The church erected here has been opened and consecrated for divine service by the Bishop of St. David's. It was erected at the expense of Mr. Wm. Parsons, the ground having been given by Mr. F. E. Lloyd, of Killybebyll. The length of the church in the clear of the walls internally is 111 feet 9 inches; the width of the nave and side aisles together, 54 feet. Moulded stone piers, or columns and arches divide the nave from the side aisles. The capitals of the piers or columns are carved to imitate natural foliage. The height of the nave from the pavement to the tie-beams of the roof is 35 feet 9 inches; and to the top of the roof (which is an open-timber roof, stained and varnished) is 54 feet 7 inches. The width of the chancel is 22 feet 3 inches, and the height 28 feet. The height of the tower and steeple from the base to the top of the *fleur-de-lis* crowning the steeple is 197 feet 2 inches. The style is Decorated. The cost, inclusive of boundary walls and gates, warming-apparatus, and gas-fittings, was 5,357*l.*; and extra amount for certain works not previously contemplated, amounting to 230*l.* odd. Mr. J. H. Baylis, of Swansea, was the architect; and Mr. J. Holtham, the builder.

Warrington.—Trinity Church tower, which was taken down about eight months ago on account of its unsound state, is about to be rebuilt. When completed, the new tower will be 12 feet higher than the old one. The expenses, which will amount to about 200*l.*, will be defrayed partly by the corporation, and partly by the commissioners of the church.

Kersall Moor, Manchester.—A reredos has just been put up in St. Paul's Church, at the sole cost of a member of the congregation. It is the length of the east wall of the chancel, and about 7 feet high. The materials are Bath stone, Caen stone, and marble. Over the lower part is worked a simple incised diaper. Above this, in the centre, are three square panels, divided by polished marble columns with foliated capitals, and whose bases are carried on richly-carved corbels. Moulded quatre-foils are sunk in these three panels, each containing a ribbon with a legend, interwoven with elaborately carved foliage. In the centre panel are the words—"This do in remembrance

of me;" with the passion flower, symbolizing Christ's sufferings. On the left side is the inscription—"Jesus said, 'I am the bread of life;'" with a handful of wheat-ears, their natural size. On the right hand the scroll reads—"He that believeth on me shall never thirst;" with a branch of the vine bearing grapes, figuring Christ and His people. On the extreme length of the altar-piece, in incised letters, are the first four Commandments of the Decalogue; and on the right the remaining six Commandments, with the prayer—"Lord have mercy upon us, and write all these Thy laws in our hearts, we beseech Thee." Over the central panel rises an equilateral pediment, surmounted by a foliated cross, and containing the sacred monogram I.H.C. A boldly-carved cornice above the panels completes the reredos, which has been executed by Mr. Evan Williams, of Manchester, from the designs of the architect, Mr. J. Medland Taylor.

MISMANAGEMENT OF PUBLIC WORKS IN INDIA.

In the three last numbers of the *Builder*, your correspondent, "Indian," very properly calls attention to the mismanagement and failure of the public works in the Madras Presidency, and rightly points out the causes from which these failures spring.

Having for several years past been engaged professionally in the execution of railway works in that presidency; and having had many opportunities of witnessing the annual failure of the Government bridges, canals, roads, &c.; I beg to add my testimony to the general correctness of the statement put forward by "Indian;" and to inclose you an extract from a leading Madras newspaper, reporting the total failure of a large bridge at Paulghaut, called Culputry Bridge, which cost the Government 30,000 rupees (3,000*l.* sterling), by a flood, caused by a heavy fall of rain, in one night.*

Want of water-way causes many of the Government bridges to fail; but defective workmanship and bad materials are also a frequent source of failure.

The root of the evil, however, is in the corruption of the Indian Government itself, both here and in India.

Instead of employing experienced civil engineers in the Public Works Department, infantry officers, the relations of members of Council and of the civil service, are preferred; and professional men are completely ignored, and treated as "interlopers," by the authorities who have the power to make the engineering appointments to the Public Works Department.

This is especially the case at Madras, where I have lately seen in the *Government Gazette* the appointment, as assistant district engineer in the Public Works Department, of an infantry officer, the brother-in-law of one of the members of the council.

I trust that an effort will be made to bring before Parliament next session the whole question of the administration of the Public Works Department, and to expose the jobbery and mismagement of the Indian Public Works. C. E.

* "Ootacamund. (From the *Neilgherry Star*.)—We learn from a correspondent that the large bridge at Paulghaut, known by the name of 'Culputry,' and which cost the Government nearly thirty thousand rupees, was completely washed away, in one night, by a heavy fall of rain,—assisted by the strong current of water over which it stood. Our correspondent states that the monsoon has partly set in, which renders the place very agreeable and pleasant."—*Athenæum and Statesman.*

"THE SPIRIT OF MODERN WORK."

Out of several communications in reply to "A. W." we take some passages from one signed "Veritas." The writer says:—

Strange it is, that after all that has been written, all that is before our eyes, there should still be any who can doubt of our advancement in this century. "An age that has fallen to such a bathos of ignominy!" Strong language. Mark the writer's ire, and assist him to express his contempt for an age that produces its carpets by machinery! I confess I expected the word "sausages," and my fear subsides when it is only carpets. Yet such do exist! and this is my apology for bringing a few well-known facts again before the intelligent reader. First and greatest, as "knowledge is power," are the improvements in the art of printing, the price of books and journals, produced by the steam-engine, or the presses and machinery produced by such; when the poorest man may store his mind with knowledge or entertainment; where his soul receives the breath of master-minds, purifying its dross as fire purifies metal. What intellectual recreation had the artisan of the fifteenth century? when "there were very few chimneys even in capital towns: the fire was laid to the wall, and the smoke issued out at the roof, or door, or window. The houses were wattled and plastered over with clay, and all the furniture and utensils were of wood." In the writings of the immortal Shakspeare, words and sentiments appear which would scarcely pass in the literature of our day. And many examples still remaining speak for themselves, bearing testimony neither to the plenitude of the article, nor the honesty of the people, when the Bibles were chained in the churches; and I would refer this writer on the degeneracy of the moderns to some extracts on p. 891 of the *Builder* for 1861, for what the state of knowledge was in the days of the first George.

The lectures, classes, and museums,—all fruits of this peculiar age, all tending to make the intellectual predominate over the animal, the godlike over the brute,—all giving increased power of research, increased appetite for it, must be remembered. Then the mammoth of the time, the birth of the age, under Providence, the producer of our advancement and comforts, the comforts of the artisan, that gives him his "carpets" at all; and he would have an unenviable spirit who could grudge him this or any of his comforts,—would deny his *railway* ride to rural scenes, where he may enjoy the free breath of heaven as a relaxation to his daily work. That has been as a reservoir of good to the man of science, crying aloud, Persevere in your research, that further discoveries may be yours, that further blessings be showered on your fellow-man! This brought into the regions of possibility the present International Exhibition; and the advent of such an event, in the day-dreams of the art-worker of the last century, may have seemed as impossible as that of a new style of architecture to many now seems; and he who asserts that the present or late gathering of the art and industrial produce of the nations is unfavourable to progress, and is not evidence of the advancement of the age, requires being put under restraint. "And to what a state of imbecility is the man reduced that has to set the steam-engine a-going!" George Stephenson, for instance. And the public will judge whether they are better served by men who travel by cold winter nights, by burning suns, by drenching rains, and amidst the electric war of the elements, holding our lives by hundreds in their hands; or by the London cabmen?

"Are your men any happier or nearer heaven?" And one is scarcely prepared to meet this question after the epithets bestowed a few lines before. There have been such times as those of the early Church, of Nero, of the Waldenses, of Louis XIV., when the Protestants were tortured, their wives and daughters abused before their eyes; "of the Irish massacre in the time of Charles I., when 40,000 individuals were slain without distinction of age or sex;" of Queen Mary, of the Covenanters, of the Inquisition, and the times of our so-called Christian architecture. Were our men any happier or nearer heaven? when in the twelfth century St. Bernard writes,—"The insolence of the clergy troubles the earth and infests the church." "They are the ministers of Christ, but they serve Antichrist." And we may gather from other writings that "the laity were glad to secure their families in any way from the attacks of priestly lust, and favoured, or even furthered, the permanent connexion of their priests with concubines:" in the beginning of the sixteenth century, when

> "Into the church then comes another sotte
> Without devotion, getting up and downe,
> Or to be seene and to shew his garded cote;
> Another on his fiste, a sparhawke or fawcone,
> Or else a cokow, and so wasting his shone,
> Before the aulters he to and fro doth wander
> With even as great devotion as a gander.
>
> * * * *
>
> There are made bargaynes of divers maner thinges:
> Buyinges and sellinges scarce worth a hawe;
> And there are for lucre contrived false leasinges;
> And while the priest his mass or matin singes,
> These fooles which to the church do repayre
> Are chatting and babbling as it were in a fayre."
>
> *Barclay's "Ship of Fools."* 1509.

He who doubts our advancement, would do well to look to the numberless charities peculiar to the age,—the societies, insurance offices, the savings banks, and the penny post; and he does gross injustice to the social workers who ignores such acts as the collection for the late Hartley Colliery accident, when but one feeling pervaded the land (when, had human assistance been of any avail to save the unfortunate men, it would have come from the end of the land, in one day); and the crusades in the *Builder* against all uncleanliness and sanitary evils, with a view to longevity, happiness, cleanliness, and so to godliness.

Surely the path to heaven is more open. Darkness has cleared away, with witchcraft and many superstitions; but still, with an antiquarian and superstitious feeling, many cling to the relics of these times. But to come to the pith of the advice as to "what should be the spirit of modern work," hear and admire,—"Rigidity." And he who gives the advice would do well to attend to consistency, as he teaches us to attain rigidity by laying aside the tape and rule, and having heart and eye work. "Rigidity!" We must then lay aside our admiration of the qualities which strike us in the high-bred horse as he gracefully curvets,—freedom! power! beauty! subtlety of lines! as utterly wicked; and see the qualities which ought to be the consummation of our aim, in his domestic namesake yclept of clothes. Becoming "rigidity!" nay, the spirit of modern art, should be free as our thoughts: freedom! and freedom in art is the child of power—is power! Our endeavours ought to be, with investigation working in all truth towards power: in proportion to the power of mind displayed is the intrinsic value of the art, and the freedom; but as rigidity is opposed to all freedom, it can never give power, and must be avoided.

Veritas.

OXFORD WORKHOUSE COMPETITION.

Sir,—The "muddle" of the Oxford Board of Guardians on the above subject, to which allusion is made by an alderman of that city, may possibly arise from these facts:—

The principal architects of Oxford were invited to send in designs for the new workhouse, in accordance with the printed instructions of the Board. When the time for adjudication on the designs submitted arrived, it was found that the majority of competitors showed to the Board that the cost of the accommodation required by them in their proposed new workhouse would somewhat *exceed* the sum named.

The Board, therefore, put aside these plans, and chose the plans of Mr. Fisher (builder), which, requiring alteration, were sent back to him for that purpose. The alterations having been made, the Board—the Oxford Board—retained the services of an architect of the Poor Law Board (some say a friend of Mr. Fisher's) to report on Mr. Fisher's plans. The report (for which a good round sum was paid) was favourable, and suggested a few *more* alterations in Mr. Fisher's plans.

These occurrences took place a few months ago. Why the Oxford Guardians cannot carry out Mr. Fisher's plans seems odd. One cause may be that the competing architects having now taken away their plans, the Board is possibly somewhat in the dark from not having taken copies of them. Hence the "muddle."

"Bona Fide."

CANADA: ASSOCIATION OF SURVEYORS, CIVIL ENGINEERS, AND ARCHITECTS.

This Association met in Montreal, on Wednesday, May 21st, at the Mechanics' Hall, for the election of officers and the transaction of other business. Mr. George Browne was called to the chair. The secretary read thirty-eight letters from absent members approving of the object of the meeting. The following gentlemen were elected for 1862-63:—

George Browne (Montreal), President.

Charles Baillerge (Quebec), James Stewart (London, C.W.), F. Rastuck (Hamilton), Vice-presidents.

W. A. Austin (Ottawa City), Recording Secretary.

John Tully (Toronto), Corresponding Secretary.

Augustus Laver (Ottawa City), Treasurer.

Council: Surveyors' Division.—A. Wallace, Quebec; D. Sinclair, Ottawa City; G. F. Austin, Ottawa City; Samuel Peters, London, C.W.; H. M. Perrault, Montreal; J. Hamel, Quebec; J. L. P. O'Hanley, Ottawa City.

Engineers' Division. — Walter Shanly, Montreal; George H. Perry, Ottawa City; W. B. Gallway, Ottawa City; G. L. Reid, Robert Shanley, W. H. Napier, F. W. Cumberland, Toronto.

Architects' Division.—F. Lawford, Montreal; James Springle, do.; T. S. Scott, do.; Thomas Fuller, Ottawa City; W. Kauffman, Toronto; T. Stent, Ottawa City; C. P. Thomas, Toronto.

Board of Examiners: Surveyors' Division.—D. Sinclair, Ottawa City; H. M. Perrault, Montreal; A. Wallace, Quebec.

Engineers' Division.—Walter Shanley, Montreal; F. W. Cumberland, Toronto; G. H. Perry, Ottawa City.

Architects' Division.—F. Lawford, Montreal; T. Stent, Ottawa City; Thomas Fuller, do.

HOUNSLOW LOCAL GOVERNMENT ACT.

Pursuant to notice, an inquiry was held at the Town-hall, Hounslow, on Tuesday last, by Mr. Rawlingson, the inspector appointed for that purpose by the Secretary of State, to inquire into the genuineness of "a petition under the Local Government Act 1858, duly signed by inhabitant ratepayers within the boundaries proposed, for a district to be styled the Hounslow District, and comprising parts of the parishes of Isleworth and Heston, Middlesex."

The meeting was numerously attended by owners and ratepayers of the proposed district.

The inquiry having been opened by the inspector, numerous inquiries as to the working of the Act in places where it was already in force were made by different persons present.

It transpired during the investigation that the

whole of the water from which the pumps in the proposed district were supplied was surface water, obtained at a distance below the surface of not more than 11 or 12 feet; and that, although the West London Waterworks Company had a main running through part of the district, the inhabitants generally did not avail themselves of the facility thus afforded of obtaining pure water. In addition to this, the only system of drainage consisted of that into cesspools or into open ditches: circumstances in themselves calling loudly for the establishment of some local authority competent to deal with the subject of drainage.

The superficial area of the proposed district was understood to be 275 acres, or thereabouts; the population about 6,000, and the rateable value of the property within its limits about 12,600*l.* The necessities for the adoption of the Act seemed so apparent and so well understood, that scarcely any feeling of opposition was manifested during the inquiry.

From inquiries made upon the spot prior to the inquiry, it was ascertained that during the last two years, or thereabouts, a low fever had been prevalent, which had proved fatal in many cases, but more particularly amongst children—the fever being occasioned, as was believed, by the defective drainage.

BRICKMAKING A NUISANCE.

Telford v. *Child.*—This action, tried at Maidstone July 31st, before Baron Bramwell, was brought to recover damages for a nuisance occasioned by an extensive brick manufactory belonging to the defendant at Bromley.

Mr. Bovill, Q.C., Mr. Denman, Q.C., and Mr. Prentice, were for the plaintiff; Mr. Lush, Q.C., Mr. J. Browne, and Mr. Matthew, for the defendant.

The plaintiff in the action is a gentleman residing at Bromley, where he has recently built a large mansion; and he alleged that the defendant, by the manner in which he carried on his manufacture of bricks in the neighbourhood, and the smells and other nuisances occasioned thereby, was guilty of a nuisance. The defence that appeared to be set up was that the place in question had always been used as a brickfield, and that the plaintiff was perfectly well aware of that fact before he came to the neighbourhood.

The jury, after long inquiry, returned a verdict for the plaintiff. It was held that distance was no answer if nuisance could be proved.

COMPENSATION CASE.

CHARING-CROSS RAILWAY.

At the Sheriffs' Court, Red Lion-square, before Mr. Under-Sheriff Burchell and a special jury, a compensation case was tried on the 30th ult.

Messrs. Holdsworth & Douce, wine merchants, the successors of Messrs. Cutler, of Hungerford-street, made a claim of 6,65o*l.* on the Charing-cross Railway, in respect of premises required for the railway. Messrs. Holdsworth had removed, in consequence of a notice from the company, to Pall-mall. The removal of the business was a material circumstance, as also the removal of their stock of wine, which amounted to about 5,000 dozens. The loss by damage, deterioration, and leakage of the wine, was estimated at from 3s. to 3s. 6d. per dozen. Evidence was given that port and claret wine became "sick" by removal, and it was some time before such wine was in a settled state. It was suggested that port wine, when sent to a customer, was injured; and the answer was that the sum was agreed upon before it was sent.

Mr. Montagu Chambers, Q.C., for the claimants, called a number of witnesses to show the loss Messrs. Holdsworth would sustain by the removal. Mr. Lloyd, Q.C., for the company, complained of the large amount claimed, especially in respect to the alleged deterioration of wine by the removal, when the claimants had taken more fashionable premises in Pall-mall, where the business would no doubt increase.

The jury gave a verdict for 3,500*l.* as compensation to Messrs. Holdsworth & Douce.

CASES UNDER THE METROPOLITAN BUILDING ACT.

Size of Warehouses.—At the Greenwich Police Court, Sir Charles Fox, bart., appeared to a summons, issued against the National Boat-building Company, to answer the complaint of Mr. Browne, district surveyor, of having erected a building containing more than 216,000 cubic feet, and not being divided by party-walls in such manner that the contents of each division thereof shall not exceed the above-mentioned number of cubic feet, as required by the Act.

The building in question, which covers an area of 894,000 cubic feet, has been erected by the above company in Greenwich marshes for the purpose of carrying on the construct on of ships' boats by machinery.

Sir Charles Fox explained that the building in question had been erected under the supposition that a bill to do away with the restrictive clause of the Metropolitan Buildings Act would have been passed during the present session of Parliament. A bill had been drawn for this purpose by the servants of the Metropoliton Board of Works and submitted to Sir G. Grey, who had likewise approved of the principle; but unfortunately there had been a loss of time occasioned in discussing in whom c rtain discretionary powers should be vested; some being for placing such powers in the hands of the Home Secretary; others for Sir R. Mayne, the Chief Commissioner of Police; and others for leaving such powers in the hands of the Metropolitan Board of Works;—the consequence of which had been that the session had become so far advanced that there was no possibility of obtaining the bill this year. He (Sir Charles Fox) would also mention that before the erection of the building was commenced the plan and drawings were sent in to the Metropolitan Board of Works, and were approved of by that body; and he might also add that if the company did not obtain a bill in the next session of Parliament, the Metropolitan Board of Works was prepared and intended to introduce a bill for the alteration of that clause in the present Act restricting the erection of buildings beyond the area named without party-walls being provided.

Mr. Traill said that the district surveyor had simply done his duty in bringing the case before the court; and if he was called upon to give a decision, he could only decide that the building as at present constructed was illegal. As the matter had before been placed under the consideration of the Metropolitan Board of Works, to which body the surveyor was alone responsible for carrying out his duties, he (Mr. Traill) would suggest an adjournment of the summons, for the purpose of allowing both sides to communicate with that Board further on the subject.

The summons was accordingly adjourned.

Not giving Notice.—At the Clerkenwell Court, before Mr. Barker, Mr. Ebenezer Conquest was summoned by Mr. Godwin, district surveyor, South Islington, for having erected a shop, being No. 1, Little Cross-street, without giving notice. When discovered by the surveyor a letter had been sent to the defendant, informing him that unless notice was immediately given, he would be summoned for the penalty provided by the Act. To this no attention was paid.

The defendant asserted that the shop-front was put up (between two other houses and on a brick wall) as an inclosure or hoarding only.

Fined 21s., and 12s. 6d. costs.

Books Received.

Giornale dell' Ingenere-Architetto ed Agronomo. Numbers for May and June, 1862. Milan.

This publication, issued monthly, under the direction of Signor Raffaelle Pareto, deserves to be known in England. It is exceedingly well conducted, and discusses projected improvements in Italy with ability. The present numbers contain, amongst other things, an elaborate account of the mineral riches of Sardinia. Articles from the *Builder* appear in its pages very well translated.

Miscellanea.

Photograph of some of the Members of the British Association.—A reduced photograph has been published, by Day & Son, of the commemorative picture which Mr. Alfred Brothers, of Manchester, was commissioned to execute for Dr. William Fairbairn, president of the British Association for the year 1861. The group comprises twenty-two portraits of the principal members of the Association, in an apartment in Dr. Fairbairn's residence at Ardwick. Amongst them are Mr. Bateman, C.E., Sir R. I. Murchison, Sir David Brewster, Professor Airy, Lord Wrottesley, General Sabine, Mr. Newmarch, Dr. Fairbairn, Professor Sedgwick, and Professor Willis. The portraits were each taken separately, the picture being compiled afterwards from the materials so obtained, involving no less than forty separate printings; and from this original the reduced photograph is taken at a single printing. Mr. Brothers has been exceedingly successful both in the likenesses and the arrangement of the group, and has produced a most interesting souvenir of the meeting of a number of eminent men. It is, in fact, a very remarkable work.

Marble Chimney-piece.—Messrs. Edwardes, Brothers, & Burkey, have just now completed a carved statuary marble chimney-piece, intended for Dorchester House, Park-lane, of more elaborate character and beauty than usual. It includes two caryatid figures, sculptured by Mr. Jackson, and cost about 1,000*l.*

The Norwich School of Art.—At the half-yearly meeting of the friends and supporters of this school, the Mayor presided, and delivered the prizes. A Queen's medallion was given to one of the pupils (Miss Rose); and nineteen medals were distributed; nine of them to young women. Numerous prizes were also given to pupils connected with various local schools.

Hardening Stone.—Messrs. Jesse Rust & Co., of the Lambeth Glass-works, state that they have discovered a simple method, by means of a single solution containing silica, lime, alumina, and potash, of indurating soft stone to an extent greater and more complete than has yet been otherwise attained. Caen stone they speak of polishing like marble for interior work after induration. The composition, they say, forms a hard, tough, and insoluble mass, a glass cement, or glass concrete, in fact, in the pores of the stone; and may be brushed in effectively by a child, without any attention to chemical quantities, double decompositions, &c.

Photographic Progress.—A curious discovery has been made by a photographer of Paris; namely, the means of photographing the bottom of the sea to a great extent.

The Philosopher's Stone.—While making some chemical experiments, a French engineer has lately discovered two combinations of copper imitating so well gold and silver, that one cannot fail to be misled at the first glance. These alloys appear to have the characters of the precious metals;—a malleability which renders them capable of being bent or hammered into any shape; a sufficient degree of hardness; lastly, the property of non-oxidation by the atmospheric air or other oxygenated gases. The price per kilogramme of this substance will not exceed 15f.; while a kil. of gold (coined) is 3,040f., and that of silver 200f.

The late Robert Robson.—We have to record the death of Mr. Robert Robson, who, for the last six years, has been a frequent contributor to publications connected with architecture. Mr. Robson was originally an architectural modeller of considerable ability, brought up under the late Mr. Bernasconi; and was employed on the decorative plaster-works at Windsor Castle, Stafford House, &c. Latterly, his failing health compelled him to relinquish the practice of modelling, and to devote himself to writing for the press. Mr. Robson was working laboriously upon a series of articles on the International Exhibition, up to five weeks before his death, which took place on the 29th ult. (in his fifty-seventh year), at his residence, No. 13, Little James-street, Bedford-row. We regret to add that his widow is left unprovided for.

Sale of Somerleyton.—We understand that Mr. Frank Crossley, M.P., has purchased from Sir S. Morton Peto the mansion and estate of Somerleyton, near Lowestoft, Suffolk. We believe that one of the objects of Mr. Crossley in making this purchase is to provide, in conjunction with his brothers John and Joseph, by a charge upon the Somerleyton estate, for the endowment of the "Crossley Orphan School and Home," Skircoat Moor, near Halifax—a splendid institution now in course of erection at the cost of the three brothers. In this institution it is intended to accommodate about 300 orphans of both sexes, a considerable portion of whom will be wholly maintained and educated, and ultimately placed out in situations. We believe it is also intended that this purchase shall in like manner provide a permanent endowment for the 22 almshouses which were erected by Mr. Frank Crossley in 1855, and also for a similar number of almshouses now in the course of erection by his brother, Mr. Joseph Crossley.—*Leeds Mercury.*

Health of London.—The report on the health of the metropolis, which appears weekly in the newspapers, is in many ways of great value; for it not only shows us the general state of the health of this vast city, but traces the diseases which rage in particular neighbourhoods; and in many instances directs that degree of attention to them which at times leads to their remedy. The last return shows that the health is, on the whole, satisfactory; for the deaths in the week were less by a hundred than they would have been under the average rate of mortality, and the births exceeded the deaths in the same time by 621. If such circumstances continue, the increase of the metropolis in one year would be 32,292. Typhus was returned in 74 cases: 32 of these were returned as typhus, 18 as "typhoid fever," and the remainder as "gastric fever." There were 48 deaths from scarlatina and diarrhœa, and English cholera carried off 77, the most of whom are children. In considering the extent of typhus fever, which depends on sanitary arrangements, those who refer with care to the registrar-general's weekly report will have noticed the large number of deaths which occur weekly in the London Fever Hospital. In the week above referred to thirteen deaths occurred in this institution. This is about a tenth of the whole amount of deaths happening from fever in the whole London district. Taking into account the number of cases which are cured in this hospital, the death figures enable us to judge of the extent of its usefulness. No disease requires more careful and distinct treatment than the various phases of fever. In many instances to remove the poor when thus afflicted from their wretched homes gievs the only chance of saving their lives. In other ways it is difficult to over-estimate the benefits which are conferred by this institution; and it is with regret that we hear accounts of the difficulty which there exists in obtaining sufficient money for its support, and that the medical attendants and nurses are so over-taxed as to cause danger and damage to their health. This should not be so.

The Middle Level Inundation.—The water on the fen is gradually diminishing, but not by means of the syphons: these have not yet arrived, but they are expected to be in action about the middle of August. Various opinions are current as to the practicability of draining by this means. The breach in the bank is being filled up, but the work proceeds slowly. The ruins of the sluice are in course of removal. Several law actions against the Level Drainage Commissioners are in progress.

Commencement of the Railway Bridge at Blackfriars.—The preliminary works for the construction of the railway bridge at Blackfriars have been commenced by the contractors, Messrs. Peto, Brassey, & Co. The operation of pile-driving is being carried on at low water, two rows of strong piles having been already driven into the shore on the Surrey side of the intended bridge. A steam-engine will be used in hoisting the pile-hammers.

The Fall of Isleham Church Tower.—The tower, it is stated, will be rebuilt, with an additional elevation of 27 feet, and as much of the old material will be used as possible. A correspondent of the *Bury Post* says, however, that the tower must have been built of the worst materials imaginable,—nothing scarcely but chalk and very badly worked mortar. There is no doubt the tower was struck by lightning about six years ago. The nave, side-aisles, and transepts of the church are said to be in a very dangerous state.

The Baxter People's-Park, Dundee.—A meeting was recently held at Dundee for the purpose of erecting a monument to Mr. David Baxter, of Kilmaron, and having pictures taken of the Misses Baxter. The monument is to be placed in the Baxter People's-Park, and the pictures in its pavilion. This park has been lately granted and fitted up for the people of Dundee by Mr. and the Misses Baxter; and the people have resolved thus to show their appreciation of the gift. About 1,200*l.* will have to be collected. The first subscription received by the chairman of the meeting was "too heds" from a mill-worker; and we know what postage-stamps in England have already done in raising large subscriptions.

Monumental.—The pedestal of the Newcastle monument to George Stephenson has now been reared to nearly its height. The monument, by Mr. Lough, will, ere long, therefore, be complete.——A Gothic tomb has been erected in Burntwood churchyard, Lichfield, to the memory of the late Mr. Samuel Pole Shawe, of Maple Hayes. The form of the tomb is an oblong, the lower platform being of Hollington stone, and the upper structure of Mansfield magnesian limestone. At the angles are four octagon shafts, surmounted by capitals with various decorations of leaves and flowers. The sides and ends are panelled, and the inscription is in the Mediæval style. The tomb is surmounted by a horizontal cross, decorated, and the whole has been executed by Messrs. John & James Hamlet, of Lichfield.——The committee appointed by the Town Council of Edinburgh to confer with Mr. J. Ballantine on his proposal to repair Burns's monument met recently at the building, and Mr. Ballantine informed the committee that he had upwards of 50*l.* in bank for the repairing of the structure and the erection of a keeper's lodge. Important relics would be contributed, so that the monument might be rendered interesting and attractive. The work of renovation will be begun without delay.——Coincident with the nuptials of Princess Pia and the King of Portugal in autumn is the grand international festival of navigators, convoked at Genoa, for the 12th October, on occasion of unveiling the statue of Christopher Columbus. The monument is already erected, and the bassi relievi are alone wanting.——The model for the Wellington Statue, which is to surmount the column in erection on the site of the old Islington Market, at Liverpool, is now in a forward state in the studio of Mr. Lawson. The duke is represented in the undress uniform of a field-marshal, wearing a short military cloak. In his right hand he wields a baton, and his left rests upon his sword. The *Journal* considers the model a satisfactory one. It is to be immediately cast in bronze, and the model is to be taken to London for that purpose. The column when completed will have four bronze panels on its base, and upon these Mr. Lawson is now engaged. The front one will represent the Battle of Waterloo; and the design includes ornamental and emblematical accessories. The height of the statue is 14 feet.——A monument, in the Early English style, has been erected in Mansfield Cemetery, to the memory of the late Colonel Wildman, of Newstead Abbey, the friend and schoolfellow of Byron.

The Temporary Road across Hyde Park, and the Marble Arch.—In reply to Sir M. Peto, in the Commons, Mr. Cowper says he does not feel authorized to keep the new road open after the Exhibition. He thought the experience of this road might aid in any consideration which the House might give to the establishment of a permanent road. The Marble Arch, like other public monuments exposed to the atmosphere of London, required periodical cleansing. He had tried water from a fire-engine without any very decided result. He thought it necessary that the arch should be cleansed more thoroughly at the end of every ten years.

Wrought-Iron Plates.—Two of the largest wrought-iron plates ever yet made were recently rolled at the Butterly Company's Codnor Park Iron Works, near Alfreton, Derbyshire. The dimensions of one of these are 42 feet long by 7 feet 2 inches wide in the middle, and 4 feet 10 inches at the ends by 2 inches thick; containing 252 superficial feet, and weighing 9 tons. The largest plate in the Exhibition is from these works, and contains 163 square feet, being 89 feet less than the above. The plates recently rolled are for a beam pumping-engine of 84-inch cylinder, 10-feet stroke, and upwards of 300-horse power, for the Clay Cross Colliery Company.

Putney Bridge.—We are glad to observe that in the *Times*, and other papers, the disgrace of allowing this bridge to continue in existence is at length urging the public to get rid of it. Our efforts, therefore, are not likely to be fruitless. A correspondent of the *Star* thus reiterates the facts of the case:—"Why, in this age of bridges, such a structure is allowed to remain is inexplicable. It is the terror of all who navigate that part of the river; and its tolls are, in the case of carriages and horses, 200 per cent. higher than other bridges. The river there is but 150 yards across; and yet this bridge has over twenty arches or piers, through only three of which any craft can pass. The consequence of this is, that, below the bridge, the river has gradually become so shoal that at low tide it can almost be forded, and the centre arch only is available for navigation."

The Sheerness Surveyorship.—At a reeent meeting of the Local Board of Health, tenders for the office of surveyor were opened, forty-one having been sent in. The highest salary required was 250*l.* per annum, and the lowest 1*l.* 1s. per week, with residence. The tenders were referred to a committee of the whole Board. A letter was then read from Mr. Beale, the present surveyor, in which he requested the Board to retain him in their service. He stated that he had served the Board for twelve years, and had done his duty faithfully, and remarked that it was an impossibility for one man to do the duty of the town and the public works at the same time. No comment was made on this letter. At a subsequent meeting the report of the committee was read. They recommended Messrs. A. Dawney, W. C. Rowell, T. White, D. Colder, J. Hall, and W. Stutely, as those most suitable, both in respect to salary and qualifications, as represented in their testimonials. The further consideration of the subject was deferred.

Brickmaking Machines.—"Some Old Brickmakers" say, in the course of a long communication,—"We have noticed that awards have been made to Messrs. H. Clayton & Co., for the best brickmaking machinery; to Messrs. Bradley & Craven, for a superior dry-clay brickmaking machine; to Mr. Whitehead, for well-constructed brick machinery. Respecting the merits or demerits of brickmaking machinery, we have no inclination to make any invidious comparisons. There is nothing astonishing in reading what is stated about turning out 1,200,000 bricks per week, at Burham, by eighteen machines; that is, 66,666 per week each. Having some knowledge of the machines at Burham, and several other places, we are prepared to state that we have known upwards of 100,000 of bricks made in one week with one of the "Ainslie" wire machines, such as are in use at Burham, instead of the 66,666, as stated. But we are a little surprised at what is said to be done at the Victoria Docks. The large brickmaking machine at the Victoria Docks is stated to make 27,000 bricks per day of ten hours. We fancy this machine is overrated, and have been informed that 21,000 is the most that has ever been made in one day of ten hours. An acquaintance of ours has at work one of these brickmaking machines, similar to the one at the Victoria Docks; and we find that for upwards of six months the same has not exceeded making 15,000 bricks per day of ten hours, and the same has been worked by thoroughly practical men."

Country Excursion.—Messrs. Worssam & Co. entertained their workmen and others at Hampton Court, a few days ago. At the dinner, which followed, Mr. Worssam took occasion to object strongly to some observations which had been published in a scientific journal, on the "Wood Working Machinery" in the Great Exhibition.

Gas.—The Chertsey New Gas Company's Works are rapidly progressing towards completion, notwithstanding repeated attempts of the old company to interfere, by their workmen, with the laying of the new company's pipes by filling up the trenches opened for the purpose.——The Glasgow Gaslight Company's report states that, notwithstanding the lowering of the price of their gas from 5s. to 4s. 7d., they are prepared to pay a dividend of 10 per cent. on old stock, and 7½ on new. The company have a reserve fund of 26,761*l.*, from which, however, they propose to aid the dividend with a sum of 1,518*l.* They express a confidence in the reduced rate of charge, notwithstanding outlay requisite for keeping the works in a state of efficiency.——The report of the Stirling Gas Company stated that a large sum had been expended on the improvement and extension of the works. A dividend of 7 per cent. was resolved on.——The Worcester Company have declared a dividend of 8 per cent., and the Sherborne Company one of 7½ per cent., reducing the price of their gas at the same time to 6s. 3d., with 5d. discount for cash.

Sèvres and Wedgwood.—If the French can lay claim to the parentage of the Sèvres pottery, we can also show another kind, which is purely English work, and quite equal to it; indeed, in some respects, far superior. There are few works of native art of which we have better reason to be proud than of the exquisite productions of Wedgwood. About the middle of the last century he began to make experiments. After many years of labour and endurance, equalled only by that of Palissy himself, he produced the admirable facsimile of the Portland or Barberini vase, of which there are three copies in this collection. When this vase (now in the British Museum) was offered for sale by auction, Wedgwood was anxious to possess it, thinking that many persons would be willing to pay a liberal price for a good copy. For some time he continued to offer an advance upon each bidding of the Duchess of Portland, until at length, his motive being understood, he was offered the loan of the vase if he would consent to withdraw his opposition, and the duchess became the possessor for 1,800 guineas. But Wedgwood did not confine himself to copies: he produced many fine original works, a large number of which are now brought together. He was materially assisted by the classical learning and elegant taste of his early partner, Bentley, a descendant of the famous critic. Subsequently, Flaxman was employed to model the more important works, when they assumed the elevated and refined form of the Grecian school.—*Once a Week.*

The Bristol School of Art.—A meeting was held at the Fine Arts' Academy on 30th ult., Mr. P. W. S. Miles in the chair, for the distribution of local medals and prizes to the students of the above school. There was a numerous attendance. The Chairman, in opening the proceedings, said that this was the first occasion on which the prizes had been publicly distributed. The prizes amounted to twenty local medals, seven other rewards, fifteen works marked "fair," and eleven sufficiently good to be sent to London for the national competition. In addition, there were six prize students, the excellence of whose productions had entitled them to the right of receiving gratis instruction at the school for the next year, the South Kensington Institution paying 1*l.* for that purpose. Latterly, the committee had thought fit to appoint a new master, Mr. J. A. Hammersley, F.S.A., who would, he hoped, carry out the objects of the school to the satisfaction of all. Those present who had been to the Exhibition, and closely examined the various articles displayed there,—the productions in glass, furniture, china, metal work,—would see the astonishing improvement which had been made in the manufacture of these goods. He did not wish to cry down the Exhibition of 1851; but, certainly, clumsy and bad designs were one of its prominent characteristics, and the reverse was the case now. The chairman then referred to the debt of 700*l.* upon the school. It was wearisome and trying to the committee to be perpetually struggling to wipe off that debt; and now that they had succeeded in putting the school in the position it ought to occupy, they hoped that the public would assist them in liquidating the claims upon them. Mr. Hammersley delivered an address on the value of the School of Art in Bristol.

The Hydraulic Engineers of Manchester. The warehouse hydraulic engineers in this city have formed a society, the objects of which are the pecuniary assistance of its members in time of scarcity of employment; likewise their mutual instruction in all that pertains to the safe and economical working of steam-engines and boilers.

Coventry School of Art.—The new school, for which subscriptions have been raised amounting to 2,400*l.*, is about to be commenced. A contract for the work has been entered into by Mr. Mault, builder, for 2,165*l.* The total cost of the new building, it is understood, will be about 2,800*l.*

Metropolitan Drainage Tenders.—At the last ordinary weekly meeting of the Metropolitan Board of Works, tenders were opened for the construction of the main drainage works of the western district, and were as follows:—Dethick, 70,123*l.*; E. Thirst, 68,287*l.*; Hill, Keddell, & Robinson, 46,644*l.*; Walker & Co., 71,090*l.*; W. Moxon & Co., 68,314*l.*; J. Savage, 58,353*l.*; and J. Marriott, 57,000*l.* The estimate of the engineer was 57,000*l.* The Board accepted the tender of Messrs. Hill, Keddell, & Robinson, subject to the usual conditions. Since, Messrs. Hill & Co. have withdrawn their tender.

The Metropolitan Underground Railway. The half-yearly report of the directors states that the report of the engineer shows the railway to be now practically completed, and that the opening has become a question only of weeks. The Great Northern have nearly completed their hotel curve at King's-cross. The Great Western have made great progress with the construction of a station at Bishop's-road, Paddington. The corporation of London have passed their Markets Bill, and authorized the purchase of the lands necessary for the stations of this and the Great Western Companies, and also for the new meat-market and its approaches in Smithfield. It has now become necessary that this company should forthwith execute the eastern curve at King's-cross, and make the extension line and station works at Smithfield. The directors have not yet made any definite arrangements with regard to the Finsbury extension capital.

The International Exhibition Building for an Industrial University.—It is said to be no longer uncertain (?) that the scheme for an Industrial University will be pushed. If the Exhibition even nearly pays—a matter of which there is now little question—there will be laid before the public *in limine* the plan of an Industrial University, to be founded within the walls of the building. As yet there is some doubt as to the details; but the plans for the improvement of the Exhibition, with a view to the establishment of an "Industrial University," have been drawn and laid before her Majesty's commissioners, according to our contemporary, the *Morning Herald*. The domes, says our authority, are to be made less squat: there is to be a structure of glass in the centre of the building; not unlike, though on a larger scale than, the roof of the conservatory in the Horticultural Gardens; and, while the Cromwell-road front is to be ornamented with mosaic pictures, the garden front is to be redecorated.

Loch Katrine Waterworks.—A report by the engineer of the Glasgow Waterworks on the supply of the water and state of the works was submitted to the ordinary monthly meeting of the Glasgow Water Committee on Monday. It stated that in Loch Katrine, Loch Vennachar, and Loch Drunkie, there was at present 137 days', or four and a half months' water, including the compensation of the river Teith; and in the Mugdock Reservoir, 32 days' supply for the city in addition. At the Gorbals works there are 183 days', or six months' water, also inclusive of compensation. The average quantity of water sent into the city during April, May, and June, from the Loch Katrine Works, was 16,300,000 gallons a day; from the Gorbals Works, 3,400,000 gallons; together, 19,700,000 gallons a day; being 200,000 gallons a day more than during the corresponding three months of last year; previous to which time the consumpt had taken a start of about two million gallons a day. In addition to the 3,400,000 gallons a day sent from the Gorbals works, there were at present being sent over to the south side of the river about 1,000,000 gallons from the Loch Katrine Works, making the total supply to that side 4,400,000 gallons a day. The aqueduct was thoroughly examined in the end of May, while the water was stopped off at the loch, and found in good order. The quantity of water sold in the city to factories and public works, by meter, during last year, averaged 1,435,000 gallons a day, against 1,253,000 for the previous year; being an increase of 232,000 gallons a day.

Minor Memorials of the Prince Consort. At Whixley the parishioners have placed a new clock in the church tower as a memorial of Prince Albert. Photographs of the tower with the clock face were forwarded to her Majesty, who kindly replied, through Sir C. P. Phipps, approving of the memorial.

Threats to Employers Abroad.—Mr. Hack, the English engineer directing the construction of the railway bridge over the Tiber, has received an anonymous letter from his workmen, threatening him with assassination if he do not immediately dismiss his three foremen.

Dunfermline Abbey.—The work of renovating and restoring is going on. The stairs leading to the bartizan of the steeple are in course of repair: the dwarf pillars at the sides of the windows of the clerestory have been restored; and the Romanesque pillars and zig-zag arches which line the wall on the north and south sides and west end of the nave have been reproduced; whilst most of the unsightly beams between the pillars have been removed. An open oaken roof is considered to be now the only thing wanted for an exact reproduction of the structure of the twelfth century.

Royal Italian Opera-house.—If we may trust to report, and the fact that whenever, without previous arrangement, we have sought to visit the house to report progress, there was not room for a mouse, Mr. Gye has had a most successful season without any extraordinary expenditure. Madlle. Patti has continued to be the great card of the manager; and in Meyerbeer's sparkling music of "Dinorah," on Tuesday last, achieved a success of a remarkable kind—the greatest that has yet attended any of her efforts. "Massaniello" is to be produced this week, for the first time in the present theatre, with entirely new scenery and appointments: Mario, Graziani, and Madlle. Battu supporting the principal parts. The theatre is announced to close positively on the 16th.

"Steam-power Superseded" by "A New Principle in Natural Law."—Mr. George Rydell, of Castle-street, Holborn, has invented and patented "an apparatus," which he also calls "a wonderful mechanical appliance," and of which he speaks when he "declares to the world that he has found out a mode of raising water from an unlimited depth to an unlimited height, without being in the least dependent upon steam-power," and "no matter what the quantity might be." He asserts that, although the *Great Eastern* has a steam-power of 3,000 horses, he can "not only propel this monster vessel over the Atlantic at the speed it now travels by steam agency; but, *from cisterns of cold water*, he can obtain even a greater power than it now possesses, without using any coal for navigation purposes; thereby leaving the 12,000 tons space open for additional cargo." The use of this new (hydraulic?) agency, however, Mr. Rydell seems mainly to contemplate using for the raising of water from mines. Shakspeare has something about protesting "too much."

TENDERS.

For the enlargement of the Wandsworth and Clapham Union Workhouse. Mr. G. H. Page, architect:—

Bond	£4,145	0	0
Child & Co.	4,140	0	0
M'Lachlan	4,109	0	0
Fish	4,011	0	0
Aries & Son	3,886	0	0
Thompson	3,885	0	0
Piper & Wheeler	3,860	0	0
Nicholson & Sons	3,824	0	0
Maeers	3,777	0	0
Adamson & Sons	3,699	0	0
Bass	3,650	0	0
Chinnock	3,650	0	0
Rudkin	3,625	0	0
Hart	3,545	0	0
Sims	3,491	0	0
Palmer	3,422	0	0

For the erection of a chapel and vestries at Stepney. Messrs. Searle, Son, & Yelf, architects:—

Axford	£10,210	0	0
Macey	9,937	0	0
Howlett & Brown	9,895	0	0
Hill & Co.	9,668	0	0
Higgs	9,665	0	0
Turner & Sons	9,643	0	0
Little	9,598	0	0
Dove, Brothers	8,875	0	0

For schools, Kilburne, Derbyshire. Messrs. Giles & Brookhouse, architects:—

Bridgart	£527	0	0
Norman	512	10	0
Kerry (accepted)	489	0	0

For re-building premises in the market-place, Derby, for Mr. J. H. Lee. Messrs. Giles & Brookhouse, architects:—

Bridgart (accepted)	£950	0	0

For new wing to Wilderslowe House, Derby. Messrs. Giles & Brookhouse, architects:—

Dusautoy	£873	0	0
Bridgart (accepted)	841	0	0

For the erection of farm buildings for Mr. James Elmhirst, at Thorne. Messrs. Brundell & Arnold, architects:—

Liller	£650	0	0
Revill & Noble	640	0	0
Hawkins	640	0	0
Wood & Son	576	0	0
Thorley	541	15	0
Armitage	515	0	0
Hinchcliff & Coltier	478	0	0
Stephenson & Johnson	473	0	0
Bleasley	445	0	0
Middleton	409	10	0

For Shipton National School and House. Quantities supplied by the architect, Mr. Thos. Jeckell:—

French	£788	0	0
Bullock & Son	777	10	0
Gray & Son	777	0	0
Williams	755	16	10

For new Congregational Chapel, Colchester. Mr. F. Barnes, architect:—

Grimes	£4,783	and the old chapel.
Shepherd	3,893	
Lee & Baker	3,884	
Hunt & Dobson	3,785	
Smith	3,633	

For St. John's National School, Ipswich. Mr. F. Barnes, architect:—

Haxell	£845	10	0
Luff	719	0	0
Dalby	674	0	0
Girling	650	0	0
Trew	648	10	0
Dannant	646	15	0
Grayston	627	0	0
Pells	597	0	0

For inn, at Romilly, Cheshire. Mr. J. Medland Taylor, architect. Quantities supplied by Messrs. O. J. & J. Showell:—

Metcalfe & Waterson	£1,295	0	0
Thackrah and Peirce	1,240	0	0
Farrell	1,236	0	0
Swindells	1,200	0	0
Fairbrother	1,025	0	0

For house near Rochdale. Mr. J. Medland Taylor, architect. Quantities supplied by Messrs. O. J. & J. Showell:—

Thackrah & Peirce	£4,127	12	5½
Metcalfe & Waterson	3,894	0	0
Clay	3,819	10	0
Bowden, Edwards, & Forster	3,733	6	6
Neill	3,517	0	0
Cochran & Co.	3,383	3	10

For Hyde-road Schools, Manchester. Mr. J. Medland Taylor, architect:—

Moody	£2,456	0	0
Genney	2,400	0	0
Farrell	2,250	0	0
Henry & Samuel Warburton	2,220	0	0
Edgar	2,218	0	0
B. & W. Hoyland	2,100	0	0
Barnes & Howe	2,063	0	0

For Christ Church Parsonage, Bradford-cum-Beswick, Manchester. J. Medland Taylor, architect:—

Grason (accepted)	£800	0	0

For alterations and additions to the rectory house and premises, Bulwick, Northamptonshire. Messrs. Goddard & Son, architects:—

Jeffs & Roberts	£897	0	0
Richardson & Sons	880	0	0
Elliott	825	0	0
Stanyard	726	0	0
Neale	720	0	0
Halliday & Cave (accepted)	699	14	0

For new farm house and building, on the Tring Park estate. Messrs. Wigg, Son, & Oliver, architects. Quantities supplied:—

Longmire & Burge	£2,948	0	0
Holland & Hannen	2,894	0	0
Patman & Fotheringham	2,875	0	0
Durley & Son	2,793	0	0
Andrews	2,750	0	0
S. & T. Honour	2,668	0	0
Cooper (accepted)	2,534	0	0

For the erection of a pair of villas at New Wandsworth, for Mr. Thomas Cleave. Mr. C. R. Gribble, architect:—

Aries (accepted)	£1,294	0	0

For brickwork of two malt kilns at Wandsworth. Mr. Herbert W. Taylor, architect:—

Mulliner & Cooper	£264	0	0
Brighton	247	0	0
Adamson & Son	209	0	0

For a watermill at Earsham, on the estate of his Grace the Duke of Norfolk. The estate finds oak for girders in floors. Mr. Thomas Jeckell, architect. Quantities supplied:—

		Time.
Rump	£1,147	
Balls	1,115 ..	Four months.
Darby	1,110 ..	Mill, three months; house, four months.
Smith & Bull	1,069 ..	Mill, ten weeks; house, fourteen weeks; mill, next spring, two months.

For the erection of a new inn at Swindon, Wilts. Mr. Wm. Brown, architect:—

Woodruffe	£858	0	0
Barnett	798	16	0
Phillips (accepted)	785	10	0

For the erection of stores at Reading, Berks, for Messrs. Simons. Mr. Wm. Brown, architect. Exclusive of fireproof flooring, smith's, plumber's, and glazier's works:—

Bricklayer and Mason.

Wheeler	£425	0	0
Strong (accepted)	317	0	0

Carpenter.

Poole	£148	0	0
Woodruffe (accepted)	112	15	0